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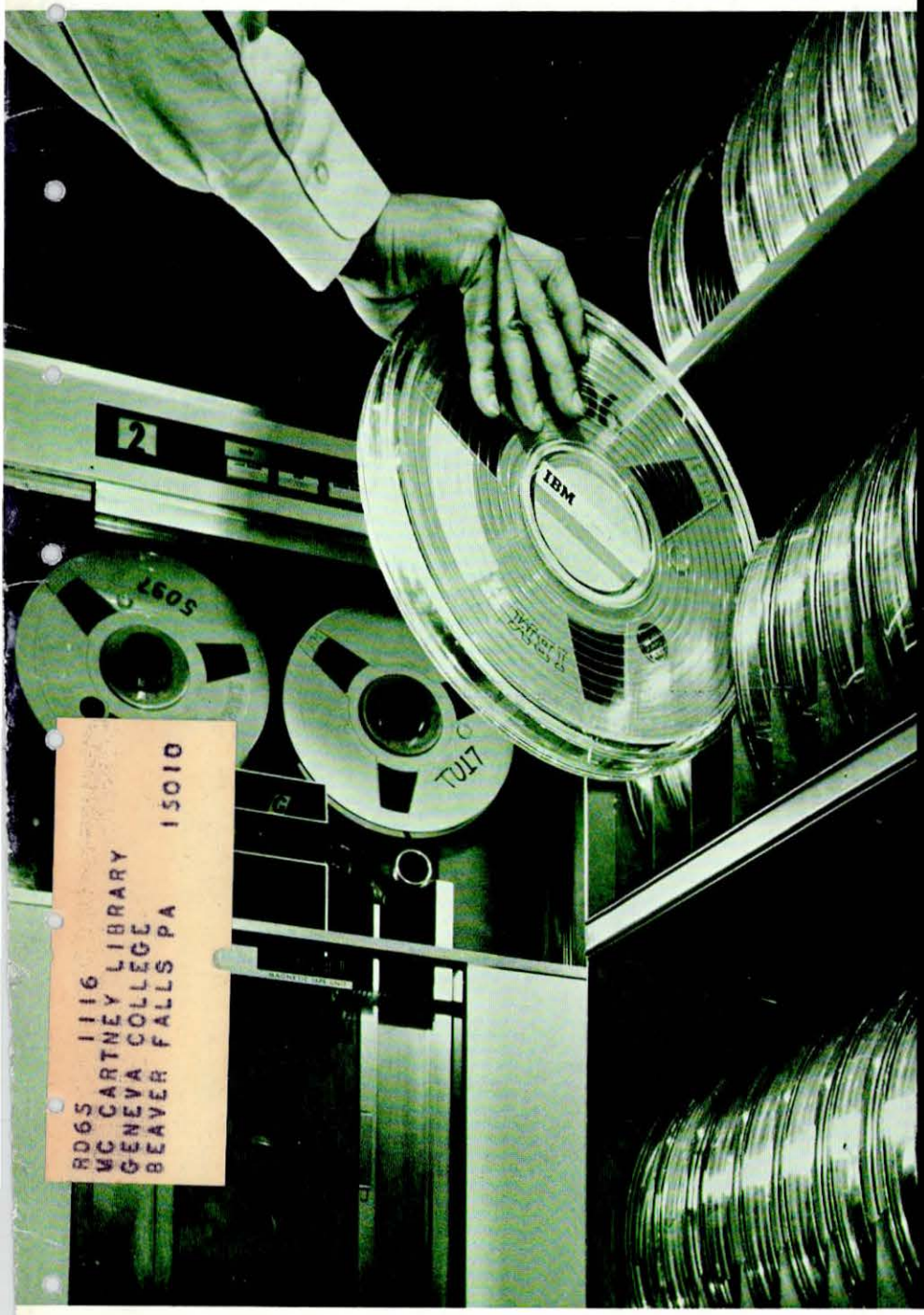
FREIGHT TRAFFIC ISSUE

New York Central tests prove: For **'transportation environment,'** railroads can't be beat . . . . . p. 45

April 26, 1965

RAILWAY AGE WEEKLY



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TO KEEP SHIPPERS INFORMED:

L&N reaches for real-time data p. 36

3C
CUSHIONED CARGO CAR

NATIONAL 3C* HYDRAULIC UNITS give a Gliding Ride

FOR WIDE SILL applications (compatible with all car builders designs) *with 20 inch travel for all capacities.*
FOR NARROW SILL applications (for stationary AAR Z-Sill) with *20 or 24 inch travel for all car capacities.*

Right through the draw line — from coupler to coupler — you can rely on National railroad specialties to perform better, perform longer.

As in the case of National 3C Hydraulic Units, this performance is built on National's solid backlog of experience in coupler-draft gear development . . . on extensive research at National's Technical Center . . . on literally hundreds of impact tests over the past 10 years with practically every type of cushioning device.

This performance experience — an unseen extra value — is built into every National product. And it's all yours when you specify National 3C Hydraulic Units for existing or new cars.

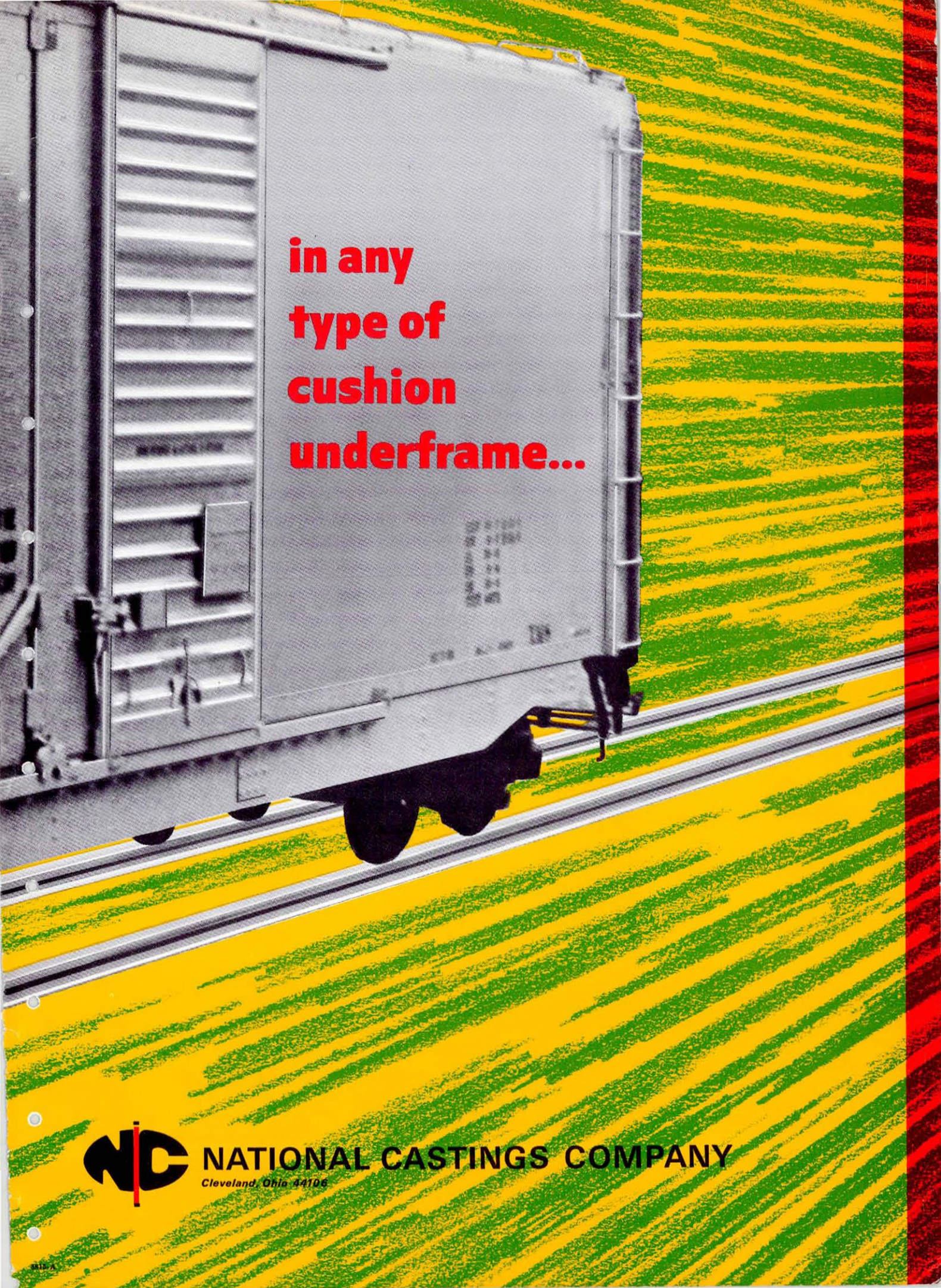
COMPLETELY ENCLOSED working parts. Brass wiper ring removes dirt from guide, keeps fluid uncontaminated without using failure-prone flexing boots. Polyurethane sliding seal provides tight seal, lasts years longer. Springs compensate for wear to maintain seal pressure.

BALL-JOINT ends, exclusively in 3C, prevent hydraulic unit from becoming cocked in sill. No damage under heaviest impacts to hydraulic unit or sill.

PRECISION CONTROL of cushioning is automatically regulated through special design of hydraulic piston working the fluid through scientifically spaced and sized orifices.

POSITIVE RETURN TO NORMAL spring is specially preloaded to assure that hydraulic unit is always ready for impacts.

HYDRAULIC DAMPENING during return to normal motion of National 3C sill minimizes recoil.

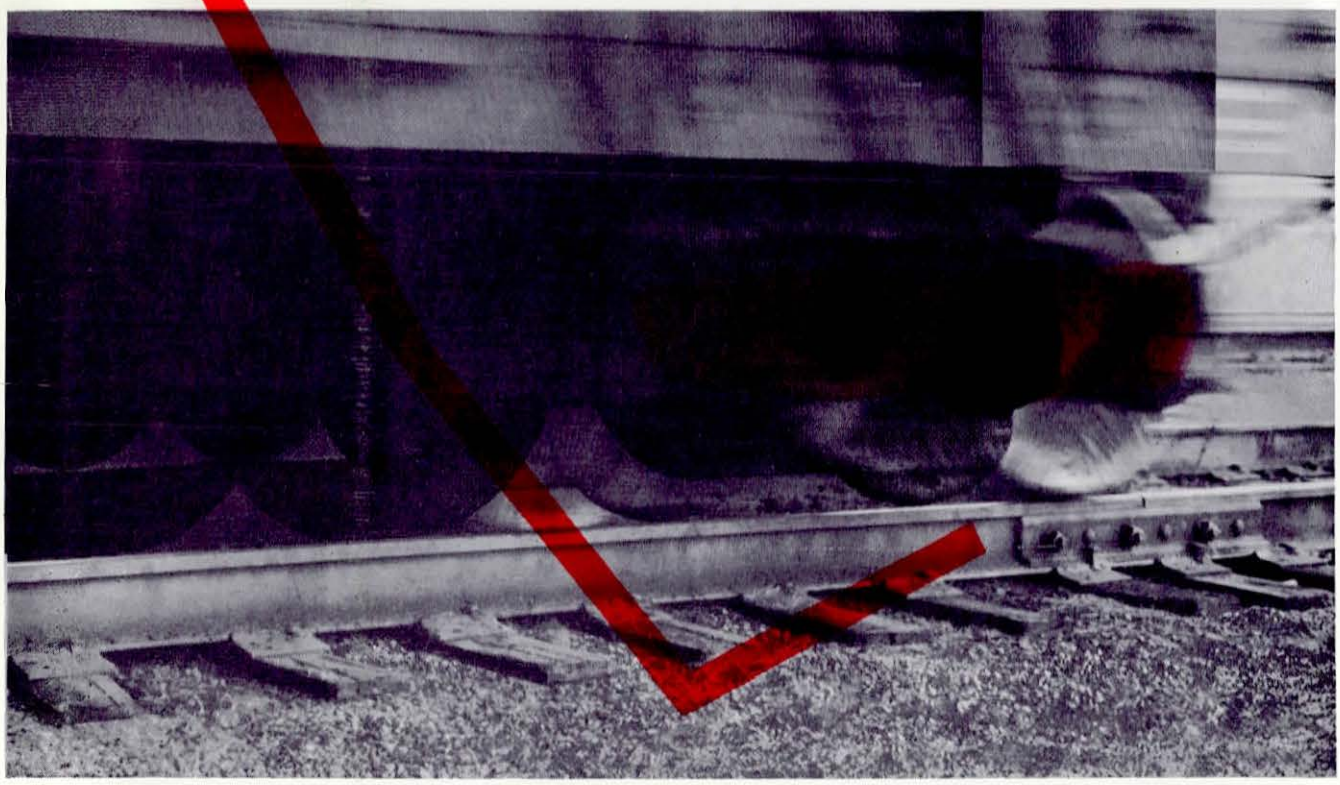


NATIONAL CASTINGS COMPANY

Cleveland, Ohio 44106

HOT BOX DERAILMENTS

UP



Better be SERVOSAFE® in '65

Derailments due to hot boxes, according to the latest reported railroad figures, show an alarming upturn that causes every railroadman concern:

1960 639
1961 471
1962 360
1963 421

Car miles between setoffs are up. But so are derailments due to hot boxes. And the derailment figures would probably run even higher, were it not for the hot box detectors presently installed.

Increasing use of roller bearings and lubricator pads still cannot cope with the increasing demands of today's modernized railroad operations. Trains are running longer, faster, heavier. Journal bearings are under greater stress and strain today than ever before.

If today's average derailment costs anywhere from a quarter-million to a half-million dollars, figure that derailments due to overheated journals cost the railroads between $100 million and $200 million in 1963, the latest reportable year. This 17 percent increase represents a rise of from $15 million to $30 million over the previous year. And what about 1964 . . . and 1965!

What a staggering sum for the railroads to pay, when for a fraction of this cost they can protect their right-of-ways with a proved, approved, and time-tested safety device: the SERVOSAFE® Hot Box Detective.* The SERVOSAFE system performs 100% infrared electronic inspection of *every* journal box on *every* passing car. It forewarns of dangerous journal overheating to guard against derailments, damage, and delay. Every time a Hot Box Detective prevents a derailment, the system *pays for itself more than twenty times!*

From the dollar standpoint alone, how can any railroad afford *not* to go SERVOSAFE in '65? Check your Servo railroad representative. He'll be glad to discuss a blue-chip investment in strategic early warning hot box detection for your road. Give him a call...today.

GEARED TO PROGRESS P R I MEMBER

RAILROAD PRODUCTS DIVISION **111 New South Road • Hicksville, L.I., N.Y.**

SERVO CORPORATION OF AMERICA

*Protected under one or more of the following U.S. Patent Nos.: 2,880,309; 2,963,575; 3,028,484; 3,095,171; 3,108,772; 3,108,773. Canadian Patent Nos.: 643,038; 643,091; 690,506; 690,907. Other U.S. and foreign patents pending.

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Railway Age, established in 1856, is indexed by the Business Periodicals Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.

Published weekly (except for four issues combining two-in-one) by the Simmons-Boardman Publishing Corporation at 440 Boston Post Road, Orange, Conn.

Railroad employees' subscription rate: U. S. possessions, Canada and Mexico, $6 one year, $8 two years, payable in advance and postage paid. To railroad employees elsewhere in the western hemisphere, $10 a year. In other countries, $15 a year. Single copies 60¢ except special issues. Address all subscriptions, changes of address and correspondence concerning them to: Subscription Dept., Railway Age, Emmett St., Bristol, Conn. 06011.
Change of address should reach us three weeks in advance of next issue date. Send old address with new, enclosing, if possible, your address label. Post Office will not forward copies unless you provide extra postage.

Circulation Dept.; Robert H. Lash, Director of Circulation, John Rogers, Circulation Manager, 30 Church St., New York, N. Y. 10007. POSTMASTER—SEND FORM 3579 TO EMMETT ST., BRISTOL, CONN. 06011.

Printed at the Wilson H. Lee Co., Orange, Conn. 06477. Second-class postage paid at Orange, Conn. and at additional mailing offices.

RAILWAY AGE WEEK AT A GLANCE

April 26, 1965 • Vol. 158, No. 17

Staying above water—'round-the-clock job

Work crews in the Midwest are working 16-hour shifts to raise tracks above Mississippi flood waters **p.13**

Where do you find tomorrow's TMs?

Traffic Poll respondents offer a wide variety of suggestions for handling traffic-manager recruitment **p.30**

L&N reaches for real-time data

A computer-Telex network instantly provides the railroad and its customers with car-status information **p.36**

ACL tests 'Whopper Hopper'

The giant car, in instrumented and actual service tests, has displayed good riding and service characteristics **p.44**

NYC aim: Softer rides for freight

The transportation environment railroads offer to shippers can't be beat, New York Central tests prove **p.45**

Rubber cushions for grade crossings

The rate at which special, damage-reducing rubber crossings are being installed is climbing steadily **p.52**

Traffic men want more 'workhorse' cars

Shippers say they appreciate specialized equipment, but their continuing need is for general-purpose box cars **p.58**

The Action Page—Traffic man or 'logistician'?

Today's industrial traffic manager often performs a far wider variety of tasks than did his predecessor **p.76**

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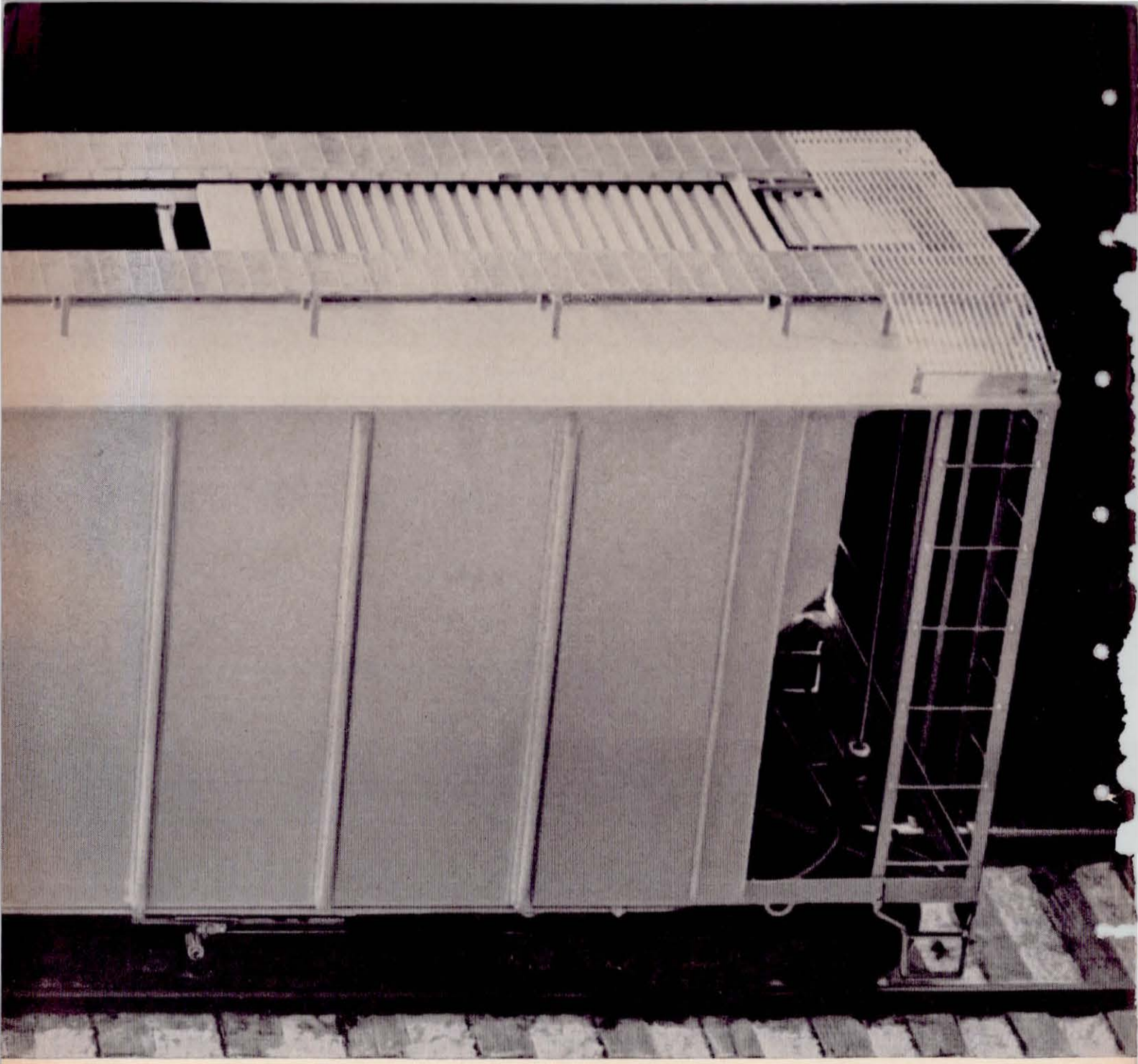


We're on top of things.

Up on the roof of the new Roll-A-Hatch covered hopper car. Our aluminum sheet makes up the retractable corrugated cover for these dry, bulk cargo cars built by Greenville Steel Car, Greenville, Pennsylvania.

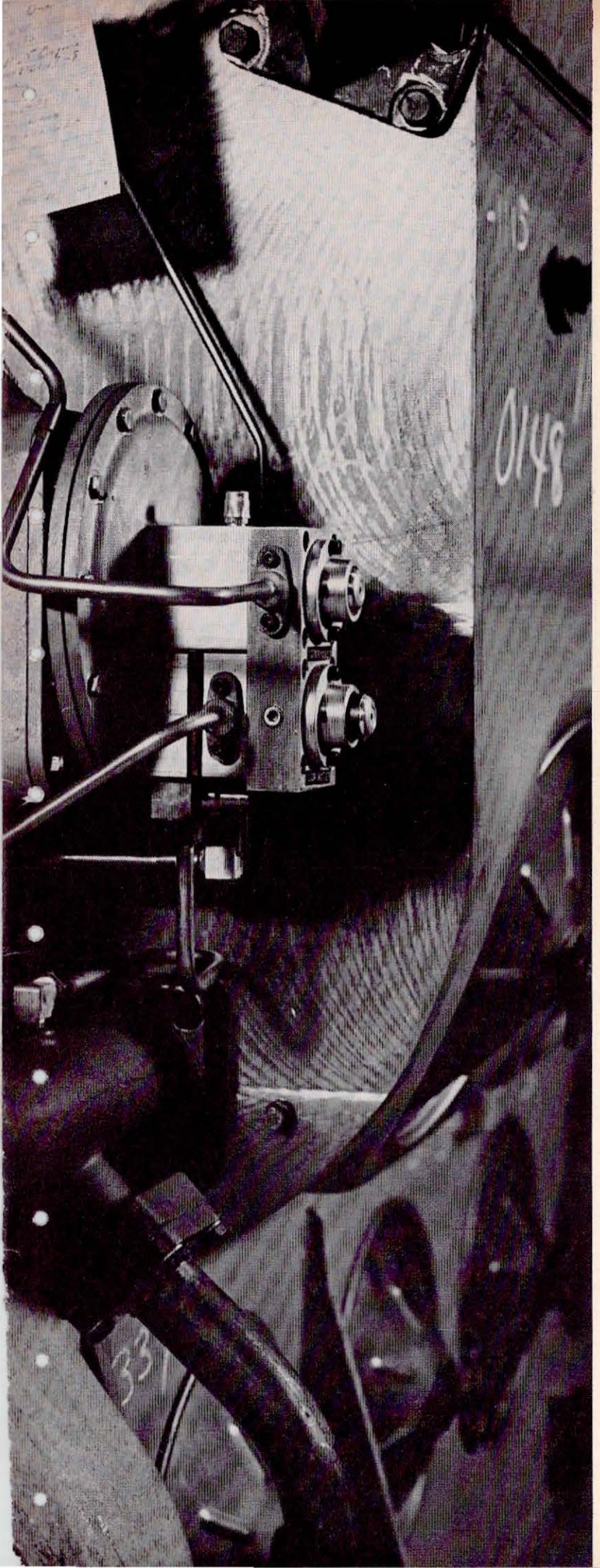
Dow designers worked with Greenville to perfect this new idea. And Dow's aluminum fabrication know-how played a key role in producing the Roll-A-Hatch. There are no latches or lifting with the Roll-A-Hatch car. One man on the ground, using a simple hand crank, can roll the self-nesting cover open to the car's full length. Loading is simplified because the chute's operator has an unobstructed view inside.

Aluminum is important to this unusual design concept. The cover is lightweight and flexible. It won't rust to contaminate lading. No lubrication or maintenance is needed. And it can withstand weights of 300 pounds without a trace of distortion.

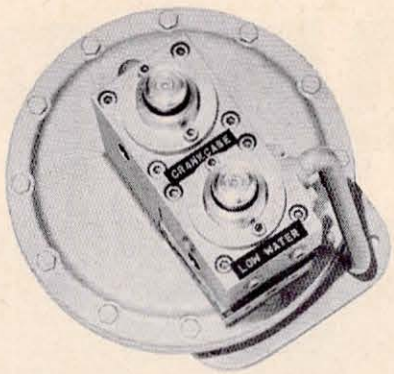
What else have we been up to here at Dow? For one thing, we came up with the idea of a massive extruded aluminum center sill. And we're making it now, along with the side sills and bolster sections for the underframe of a new, all-aluminum rapid transit car. Our extrusions, sheet and plate are going into all types of hopper cars. And we're working out the details for a boxcar bulkhead door coming soon.

We've ideas, all kinds of them. Maybe they could be matched up to your problems. Give us a try. The Dow Metal Products Company, Division of The Dow Chemical Company, Midland, Michigan.

DOW



Electro-Motive Parts MAKE the Diesel Locomotive



Prevent serious engine damage with new EMD engine protector

What's it worth to spot a cracked piston or loss of engine coolant in time?

Catch this kind of trouble as soon as it starts and you'll save the cost of an engine overhaul. That's what the new EMD engine protector can do. Unlike earlier protective devices, this combination low water and crankcase pressure detector shuts the engine down immediately in case of significant pressure changes or lack of engine coolant.

Here's how it works. The EMD engine protector balances water pressure and crankcase pressure against air box pressure through differential pressure diaphragms. Any significant pressure change trips a valve in the protector which shuts the engine down instantly through the governor.

The new engine protector, standard equipment on all of our current model locomotives, provides the most dependable self-protection that can be built into a locomotive. And, it can be applied to most early model 567 series engines in your fleet. No electrical connections required. Just hook up to existing water, air and lube oil systems.

Contact your Electro-Motive representative for all the details.

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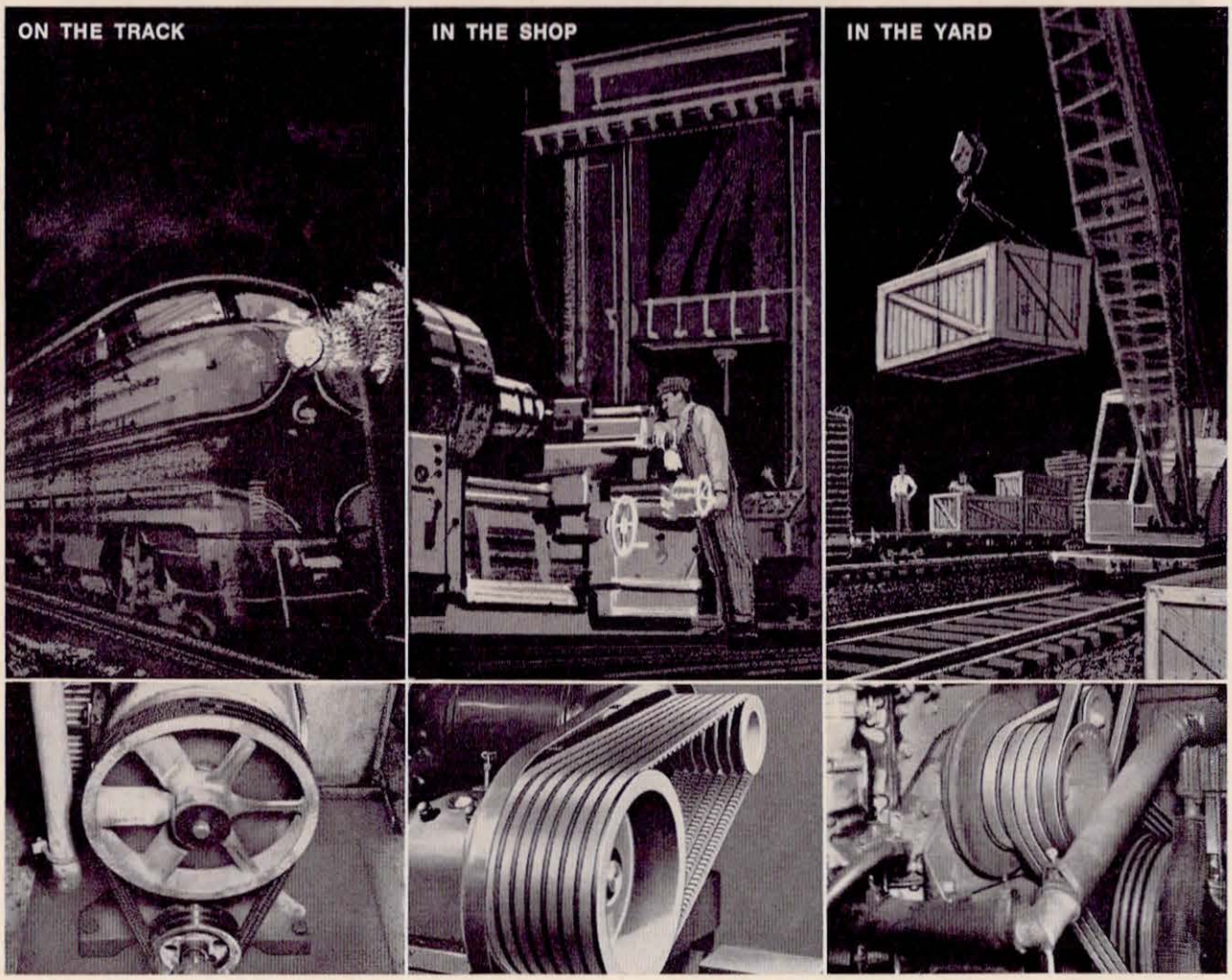
E-M

ANY PLACE!



Any place you use V-Belts, choose the Dayco Cog-Belt® to keep costs down.

No matter what type of V-Belt you're using now, the Dayco Cog-Belt can save you more by reducing V-Belt maintenance costs. △ The Cog-Belt is designed for rugged service on the track, on the road, in the yard and shops. It's easily installed on standard sheaves, seats perfectly, starts, stops and runs smoothly. Oil, heat and abrasive conditions are no problem. The Cog-Belt, with its die-cut raw edge sidewalls, grips sheave grooves tightly and eliminates belt slippage. All this adds up to longer belt life, better performance, lower maintenance costs! △ Your Dayco Railway field engineer is ready now to give you the full money-saving story on Dayco's complete line of V-Belts. Call or write today. △ Dayco Corporation, Rubber Products Division, Dayton, Ohio.

Dayco CORPORATION

WORLD'S LARGEST MANUFACTURER OF V-BELTS

SHORT AND SIGNIFICANT

REA stock sale to Greyhound held up

The ICC has postponed indefinitely the effective date of its order authorizing REA Express to sell 500,000 shares of its stock to the Greyhound Corp. The postponement is for consideration of protestant petitions for reconsideration of the order. The petitioners include five western railroads (RA, Mar. 22, p. 44) SP, Santa Fe, MoPac, D&RGW and St. Louis Southwestern.

More time for exceptions to PRR-NYC merger report

The ICC has set back from April 28 to July 12 the deadline for filing exceptions to the Examiners' report recommending approval of the proposed Pennsylvania-New York Central merger. The deadline for replies to exceptions was also set back—from May 18 to August 16.

1964 purchasing total highest since 1957

The railroads' spending for fuel, material and supplies last year was the highest in seven years. The total bill came to $1,475,599,000—up 5% from the 1963 figure of $1,401,424,000. The biggest dollar increase—$41,251,000—went for purchases of iron and steel products. The biggest percentage increase—13.8%—was registered in the forest products category. The increase was the third consecutive one for the industry, but the total was far below the 1948 high of $2.1 billion. The industry last year also spent $1.4 billion on capital equipment and improvements, and allied firms spent an additional $300 million on purchases of rolling stock.

Rail finance probe to be asked—again

Legislation proposing an investigation of railroad finances hasn't been introduced in the present session of Congress—but it probably will be. So says Sen. Vance Hartke, Indiana Democrat who has been probably the principal sponsor of such measures in the past.

REA adds 2,400 Unit-Pak cages to its fleet

REA Express' Unit-Pak container cages have proved to be so popular with shippers that the company has ordered 2,400 more of them at a cost of nearly $500,000. When the new units are delivered by the manufacturer, Union Steel Products Co., REA will have 5,255 of the cages.

BLE makes another 'fireman-on' pact

The Brotherhood of Locomotive Engineers has dropped opposition to repeal of Wisconsin's crew-consist law, in return for an agreement providing job security for firemen now employed. The agreement, involving seven railroads, is similar to the one worked out earlier between the BLE and 29 eastern carriers. It sets up an engineers' rule providing that engineers be furnished a fireman so long as the supply of men retained under the agreement lasts.

Grain shippers to get Northwest export rate

Grain moving to Northwest ports for export will travel to new, lower tariffs as a result of the approval April 19 of further rate reduction by the Transcontinental Rate Bureau for the Great Northern, Northern Pacific and Milwaukee roads. The three roads' new rates (to go into effect in about 45 days) will lower shipping costs on westbound wheat for export from 25 cents per hundred pounds from points in eastern North Dakota and South Dakota, to 5 cents per hundred pounds from stations in eastern Montana.

MONDAY MORNING REPORT

No last ride for New Haven commuters—yet

Some 25,000 commuters ride the New Haven into New York City every weekday. Last week many of them were feeling like the condemned prisoner whose sentence had just been commuted by a last-minute phone call from the governor. In this case, the sentence hanging over their heads was the threatened curtailment of rail service this summer by the New Haven. And the call from the governor's office—actually, New York Governor Rockefeller's—came in the form of an announcement by officials from New York, Connecticut, and the railroad's trustees. The group had just agreed on a $4.5 million aid plan for the road. While only a reprieve and not a pardon, the plan nevertheless virtually assures the continuation of commuter service into the city for 18 months.

A demonstration to save the trains

Under the plan, the federal government and the two states would put up the money to keep the trains running. The federal contribution would be about $3 million, and would be made under the Urban Mass Transportation Act of 1964. Thus far, there has been no official word of approval from Washington, but it's expected that the grant will be made. Technically, the federal contribution would be toward a one-year demonstration project on the road. What the New Haven would hope to demonstrate is how—through technical and financial rearrangements—a metropolitan commuter service can be rescued from extinction. The two states would have the option to continue the demonstration for another six months.

A sigh of relief, but it's only a breather

While nearly everyone connected with the life-or-death struggle on the New Haven breathed a collective sigh of relief, there was the realization that the 18 months will only provide a breathing spell. During that time, the parties involved in the demonstration project will have their work cut out for them. The New Haven says it has been losing $4 million a year on the New York service. Its equipment is old and continually breaking down, and its payroll costs are up and its freight revenues are down. But, in announcing the 18-month-long job they plan to tackle, officials were optimistic. During the grace period they "fully expect a permanent solution" to be found to the New York commuter end of the railroad's problems, at least.

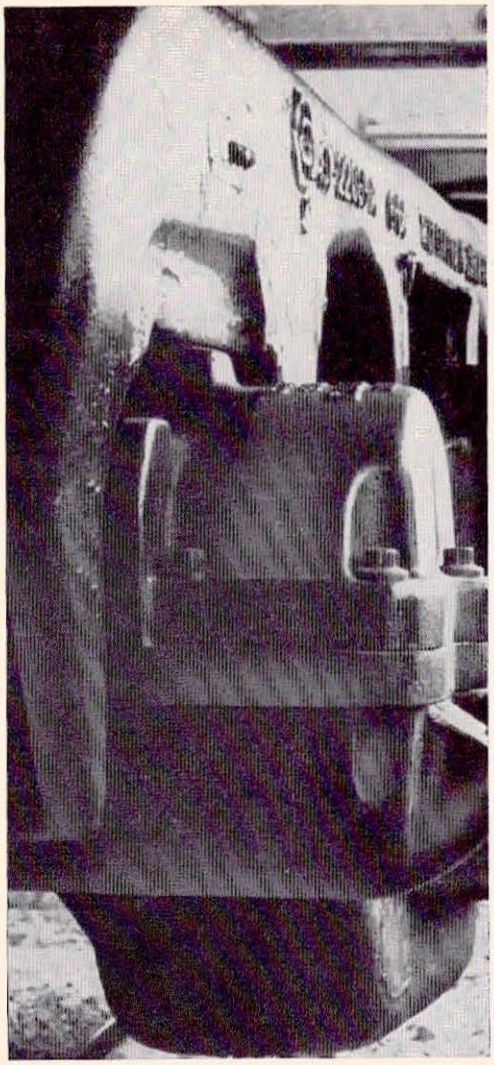
Money in the bank account by June?

Initially, the New Haven would get $2.1 million for the first year of the program, and another $1.2 million if the plan is extended six months. The road would also receive $400,000 to rehabilitate its older commuter cars during the first year; $250,000 in the next six months; and $500,000 to administer the demonstration program, and for special studies. Depending on federal approval, the road hopes to have some of the money in its hands by June to get the project under way.

In the long run, the NH still wants out

Meanwhile, in New York's Biltmore Hotel, ICC hearings continued on New Haven's application to begin cutting back commuter service Aug. 1. Railroad Trustee Richard Joyce Smith said that although the road welcomes the demonstration project, it will continue to press for authorization to discontinue commuter service. If ICC permission to begin curtailment is granted, the road will operate its commuter service on a contractual basis with the states involved. All this might eventually lead up to what the New Haven has long hoped for: takeover of its commuter operations by the New York Central under contract to a New York-Connecticut transportation authority.

Railroaders are talking about and seeking solutions to lateral shock problems



THE CLEVITE CONTROLLED LATERAL MOTION JOURNAL BEARING MAY HOLD SOME ANSWERS

With a high percentage of "in service" roller bearings at the replacement age, many railroaders fighting lateral shock problems are checking the Clevite cartridge journal bearing as a possible solution.

UNCONTROLLED LATERAL FORCES

Until recently most solutions to truck motion set up by lateral shocks have hinged on extensive, long-range truck redesign. Many railroaders now believe the controlled lateral motion in the Clevite cartridge is an important factor in giving trucks greater freedom which permits wheels to track properly and offers reduced wheel flange wear.

MANY ROADS INSTALL CLEVITE CARTRIDGE

More than 35 roads and private car owners now have the Clevite cartridge journal bearing in interchange service. In stability tests over rough, yard track the Clevite superiority is readily apparent—an important fact, particularly on the new, big cars where wheel lift is a problem.

IDEAL TIME TO EVALUATE CLEVITE CARTRIDGE

The revolution in car size, increased coupler lengths, and new types of underframes has created a perfect time to investigate the relationship of lateral shock to lateral motion in journal bearings—something not required in a journal bearing 10 years ago. Many railroads are discussing this opportunity with Clevite.

COST IS ATTRACTIVE

The Clevite cartridge is priced below roller bearings. (Years from now this same Clevite cartridge can be completely renewed for less than half its original cost.) If you are not evaluating Clevite now, talk with your Clevite representative. Clevite Corporation, Cleveland Graphite Bronze Division, Cleveland, Ohio 44110.

CLEVITE

Safely aboard a rail flatcar, loaded Twin-20's Containers can take full advantage of the long-haul economies of rail shipments.

FRUEHAUF TWIN-20'S CONTAINERS

save time, save handling, save money— whether they go by rail, road or sea!

You never know where a Fruehauf Twin-20's Container will turn up next. These versatile, lightweight Containers are as much at home on rail cars as they are on the highway or aboard ship. They've even been known to fly.

Measuring 8′ x 8′ 6″ x 20′, each Twin-20's Container provides dependable, air-tight, water-tight protection for its cargo. Because it remains sealed from origin to destination, handling of contents is reduced, damage claims minimized, pilferage eliminated.

Twin-20's Containers eliminate costly dead-heading and half-load runs, help to keep the "pay" in your payloads. Your Fruehauf representative has all the details. Let him show you what Twin-20's Containers will do for your profit picture. **Fruehauf Division, Fruehauf Corporation, 10942 Harper Avenue, Detroit, Michigan 48232.**

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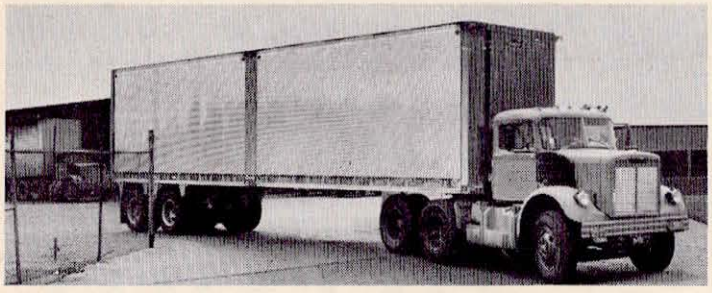
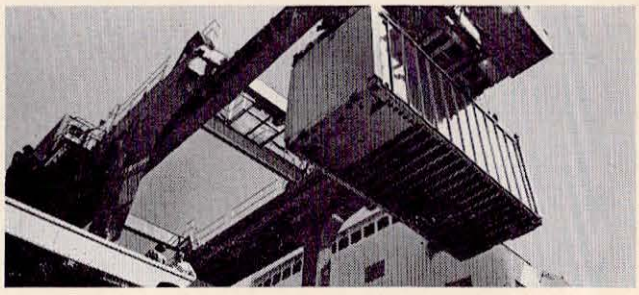
Warehousing in Motion

Leadership in ENGINEERED TRANSPORTATION since 1914



For over the road, Twin-20's Containers are joined to equal a 40′ trailer. They divide quickly into 20′ units for local delivery.



Ready to set sail, Fruehauf Twin-20's Container leaves its chassis on the dock and swings aboard ship.

Staying above water...

...'round-the-clock job

Section hands and operating crews from Minnesota to Missouri are working 16-hour shifts in a nerve-racking race to raise tracks above Mississippi flood waters. Damage is in the millions.

The Mississippi River, rising implacably day after day, is creating a wet hell for cities and towns from the Twin Cities in Minnesota southward to Hannibal, Mo. In St. Paul the river reached record depths early last week. Downriver, all the way to mid-Missouri, rising water, slides and seepage heralded the river crest expected late this month.

The river already has devastated railroad facilities in Minnesota, Wisconsin, northern Illinois and Iowa. Flood waters have knocked out railroad lines and inundated yards. The flood waters have also drawn a courageous and cooperative response from railroad employees and officers in the stricken areas. Their joint efforts stand in contrast to the stiff-necked relationship between railroads and employees stressed in newspaper stories in recent years.

● **Work, ideas and prayers.** At Dubuque, for instance, with the Chicago Great Western and Milwaukee lines already knocked out by the overflowing Mississippi, and with the Burlington's line upriver under water, Illinois Central engineering and operating men worked around the clock in cold, waist-deep water in a daring, imaginative effort to keep a line open.

With a 17-foot flood stage at Dubuque, water on April 22 had already risen past 23 feet. A 26-foot crest was forecast for the area by April 25. IC's main east-west line through Dubuque would, on April 22, already have been under several feet of water if the road's operating and engineering officers hadn't gambled on an idea.

In essence, they picked up one of their main line tracks and put it down on top of another main line track. They then poured thousands of tons of crushed rock on top of the upper track as they raised and tamped the track upward, creating what amounted to a levee.

● **So far, so good.** "Our line would have been cut last Sunday," noted weary John Dodge, IC's Iowa division superintendent, "if we had not started raising the line when we did."

By late last week, IC's section hands and operating crews were still ahead in their race with the rising water—but only by a fraction of an inch. At some points the swiftly-flowing waters would boil over the ball of the rising track—until a work train with ballast in hopper cars made a pass over the track, enabling the maintenance-of-way jacks and tampers to raise the line another precious few inches. All along the mile and a half of threatened line there were no points where the rising water was more than an inch below the base of the rail.

● **Traffic continues.** Hampered by the 15 or 16 trains that crawled at 5 mph over the threatened line every day, IC's bone-tired crews made pass after pass. Work trains spilled crushed rock on top of the line, crews and section hands scrambled in water often waist deep, keeping tension on chains gov-

WATCHING WASHINGTON WITH WALTER TAFT

TAFT

• **THE SOUTHERN** wants rate-freedom provisions in future legislation authorizing waterway improvements for navigation in its territory. This was urged last week by Frank L. Barton, assistant vice-president of that road. Barton stated Southern's case at Army hearings in Atlanta on proposed improvements to the Chattahoochee River. At the same time, he restated Southern's policy of not opposing government expenditures on waterways.

In any legislation authorizing the Chattahoochee project, Southern wants a provision like this: "Rates of other carriers which may compete with water carriers using this river system shall not be held up to a particular level to protect the traffic of such water carriers."

THE PATTERN for that, of course, is the 1958 Transportation Act's rate-freedom provision which is now Section 15a(3) of the Interstate Commerce Act. So, the Southern proposal reflects the Barton touch. Barton is no stranger to this rate-freedom approach to equal competitive opportunity in the transportation field.

THE SOUTHERN EXECUTIVE had a major role in drafting the 1958 Act. It was shaped up while he held a top position on the staff of the Senate's Commerce Committee. Moreover, he was subsequently deputy undersecretary of commerce for transportation, where he had an important part in staff work on the late President Kennedy's Transportation Message of April 1962. That message took the rate-freedom approach, which has been endorsed by President Johnson, calling for deregulation of minimum rates for the transportation of commodities in bulk and agricultural products.

SOUTHERN'S ARGUMENT is that its proposed rate-freedom provision is necessary to insure that the public will not be deprived of rate cuts which railroads may want to publish to meet the new water competition. As Barton explained, proponents of navigation projects often justify them on the ground that cheaper transportation will result—"but, once the channel is completed, they argue that the expenditure of public funds has vested the waterway with a public interest that should not be jeopardized by reduced railroad rates."

FAIRNESS to all interested parties, especially consumers, "forbids indulgence in such fallacious reasoning," Barton argued. He followed through to suggest that, if water transportation is in fact the cheapest form of transportation, as its proponents claim, there should be no objection to inclusion of the proposed rate-freedom provision in enabling legislation.

SOUTHERN'S POLICY of not opposing waterway projects is based on its conviction that it should not object to such expenditures if interested communities can persuade Congress to appropriate the money. Any other position, as Barton put it, "would be inconsistent with our policy of favoring more competition and inconsistent with the President's urging more competition in transportation."

THE BARTON PRESENTATION then went on further to point up Southern's consistency. It is not, he emphasized, one of those who agree in principle with this economic philosophy — "but, when put to the test of practical application of this strenuous system, cry for exceptions for the ideas which benefit them economically and which might not succeed if competition is permitted to operate."

erning the flow of rock from hopper doors. Ties were placed in front of car wheels to spread the stone and prevent derailments.

"A derailment on this line is what we have nightmares about—or would have nightmares about if we had much time for sleep," observed Jim Law, IC trainmaster at Dubuque, to Railway Age's reporter at the scene last week.

Anything not essential to the steady work of keeping the track above water was shelved to expedite the steady back-and-forth movement of the work trains with ballast and the passes of the three tampers, the jacks and the spot tamper following the work train.

• **Gain a little, lose a bit.** "We're getting a raise of about eight inches every time we make a pass," said H. F. Longhelt, IC Iowa division engineer, "but we don't keep all of it. The line settles back an inch or two every time we make a pass. But, so far, our ballast is not washing away and we're hoping we can keep our line on top of the water."

Last Thursday, IC's men (looking strangely Hussar-like in their hip boots and rubber waders) got a break. They were "given the railroad" from 11 a.m. to dark. The 140-or-so men who have been working 14- and 16-hour shifts battling the rising water literally "poured it on." By Thursday night, they had dumped more than 350 cars of crushed rock on the 7,500 feet of line and had picked it up more than four feet. "We originally thought we would have to raise up to meet the threat of a 24-foot crest," said IC's Dodge," but early this week the Army Engineers told us the crest would be 26 feet. We'll just have to go higher."

As the week ended, IC's work trains and forces were still battling the water and wondering if their work would hold. The project had unusual touches. The crackle of walkie-talkie radio conversations could be heard everywhere over the water. "I don't know what we would have done without those walkie-talkies," said Dodge. Engineers supervised work from boats traveling over what the week before had been IC's passenger track into Dubuque.

• **Meanwhile, further south**—Downriver, another story of similar ingenuity and effort was unfolding on the Rock Island line at Muscatine, Iowa. The Rock Island was raising almost three miles of track in an effort to get it above the flood level predicted when the river crests this week.

No official estimates of damage have been made as yet. But the damage to railroad facilities from St. Paul south to Hannibal will run to many millions of dollars for the dozen-or-so affected railroads. ■

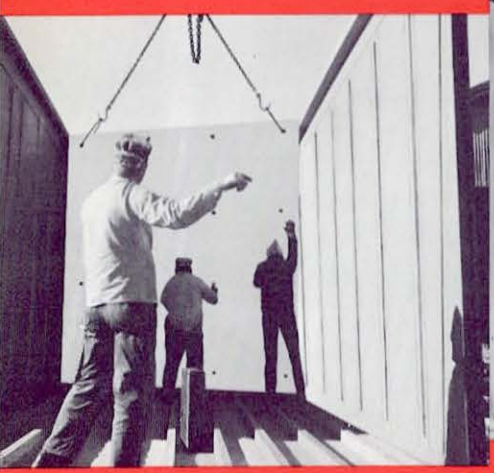
Reduce labor costs with void free LANDRETH Pre-molded Urethane foam Panels*

*PATENTS APPLIED FOR

Landreth panels increase insulation efficiency and cut costs

The new Landreth Pre-Molded Urethane Foam Panel enables railroads and car builders to build a better car faster and with less man hours in their shops. The new Landreth system enables the builder to provide a Urethane Foam car without the necessity of installing special machinery and costly facilities.

How to reduce costs and increase efficiency



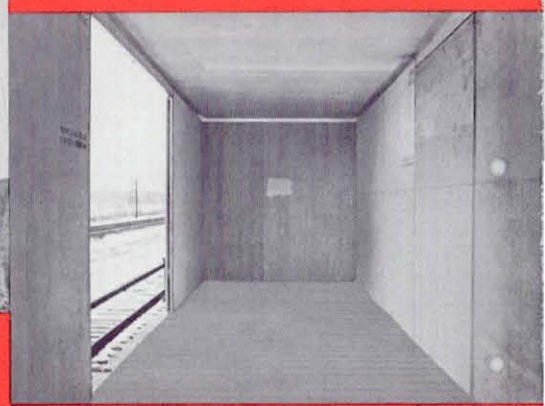
1 Workmen lowering end panel into place. Panels are moved into production line on freight cars and lifted into cars on cranes.

2 Workmen lowering side panel into place.

3 Workmen fitting side panels into place. Only 14 panels per car — panels are pre-trimmed, complete and ready to bolt into place for the sides, ends, ceiling, floor, and door.

4 Workmen fastening "Nelson" stud to outside post. Insulation thickness is reduced by ½ over conventional insulation materials.

5 Workmen inserting attaching device which when tightened, secures panel to side of car. This effective fastening system provides fastening without the normally associated heat loss.



6 Finished car. All joints foamed to insure a complete air-tight car.

Landreth's Pre-molded Urethane foam panels* proven best by test

THE Budd COMPANY
TESTING LABORATORIES
PHILADELPHIA, PA.

The Inside Story of Budd Report #2238

The Landreth Insulated Car equipped with Landreth's Pre-Molded Urethane Foam Panels has just undergone exhaustive tests. After six months of road tests, the car was tested in The Budd Company testing laboratories in Philadelphia.

Here are the startling results from the Budd Laboratory's report.

The car constructed with the Landreth Pre-Molded Urethane Foam Panels was to be tested against two other cars constructed with Urethane Foam block. All the cars had been previously road tested for six months or longer.

The Landreth equipped car had absolutely *no air leakage, no hot spots,* and *no voids in the foam.* In addition, at 100 degrees differential, the car built with the Urethane Foam block had a BTU average of 143 BTU's per hour. The car equipped with the Landreth Pre-Molded Urethane Foam Panels also at 100 degrees differential and tested under the exact conditions, showed an average of just 93 BTU's per hour.

The Landreth Insulated Car was at least 50% more efficient than the car constructed with foam block. Conclusive proof that the Landreth Pre-molded Urethane Foam Panel—is "Best by Test"!

Over 2,000 cars equipped with Landreth Pre-molded Urethane foam panels*

Landreth continues to pioneer new equipment and systems for the transportation industry. Landreth's experienced engineers have dedicated over 60 years of service to the railroads as well as to the research and development of quality, labor-saving, and profit-making systems and products.

Our modern plants operating under controlled laboratory conditions, supervised by trained engineering specialists to insure the best possible insulation to *suit your custom needs.*

Ten foam machines, equipped to provide uniform volume and temperature control of the feed streams insure fast and efficient production.

Now you can free capital that would normally be invested in special facilities, research laboratories, engineering, and labor.

*PATENTS APPLIED FOR

Reduce labor costs with easy-to-install Landreth pre-molded Urethane foam panels*

Landreth Pre-Molded Urethane Foam Panels provide a lower K factor, as low as 0.11 (BTU's/sq. ft./hr./°F/in.) at 70 degrees as compared to 0.23 for conventional insulation. Over 90% of Urethane cells are closed. Thus, locking out moisture.

Highest quality controlled Urethane material on the market today

Patents applied for

Check these features that make LANDRETH pre-molded Urethane foam panels*— best by test!

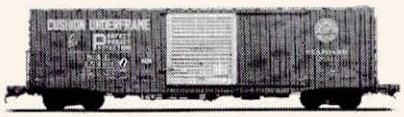
- ★ No Air Infiltration
- ★ No Localized Hot Spots
- ★ Non-Burning Foam
- ★ Easy Repairs
- ★ Seamless Vapor Barrier
- ★ Greater Thermal Efficiency
- ★ Thinner Walls
- ★ Completely Pre-Fabricated
- ★ Guarantee No Voids
- ★ All Joints Foamed
- ★ No Moisture Absorbtion
- ★ Odor Free and Non-Toxic
- ★ Fungus and Rot Proof
- ★ Added Structural Rigidity
- ★ Improves With Age—Does Not Deteriorate
- ★ Fire Proof
- ★ Does Not Split or Settle From Road Vibration or Temperature Change

Landreth INDUSTRIES, INC.

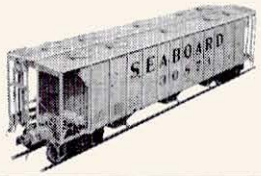
LANDRETH INDUSTRIES, INC.
2100 Greenwood Ave. • Evanston, Ill. • Phone: 328-2062

To Make Seaboard Superior Service Still Better...

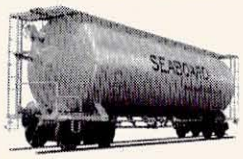
we're investing another $15,700,000 in new cars, trailers and locomotives. Builders are working now on these groups:



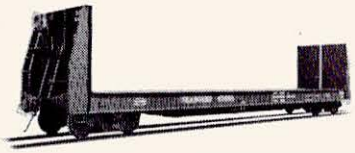
200 cushion underframe, 50-foot, wide door 70-ton box cars



150 covered hopper cars, with capacity of 100 tons and 2900 cubic feet



25 pneumatic discharge covered hoppers, with capacity of 100 tons and 2800 cubic feet



200 70-ton woodrack cars

200 insulated, ventilated trailers

35 diesel locomotives

The addition of this new equipment and motive power to Seaboard's present fleet gives assurance of still finer service for our customers. It's one of the important ways in which we seek constantly to meet the needs of shippers and receivers throughout our territory.

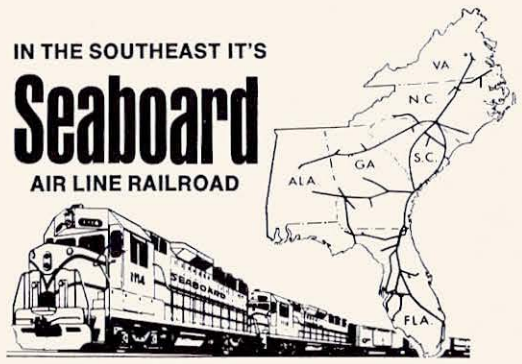
Seaboard Superior Service is designed to solve shipping problems. Ask your nearest Seaboard representative for information on how you can benefit from this modern transportation service. He'll gladly assist you.

THE ROUTE OF COURTEOUS SERVICE

IN THE SOUTHEAST IT'S

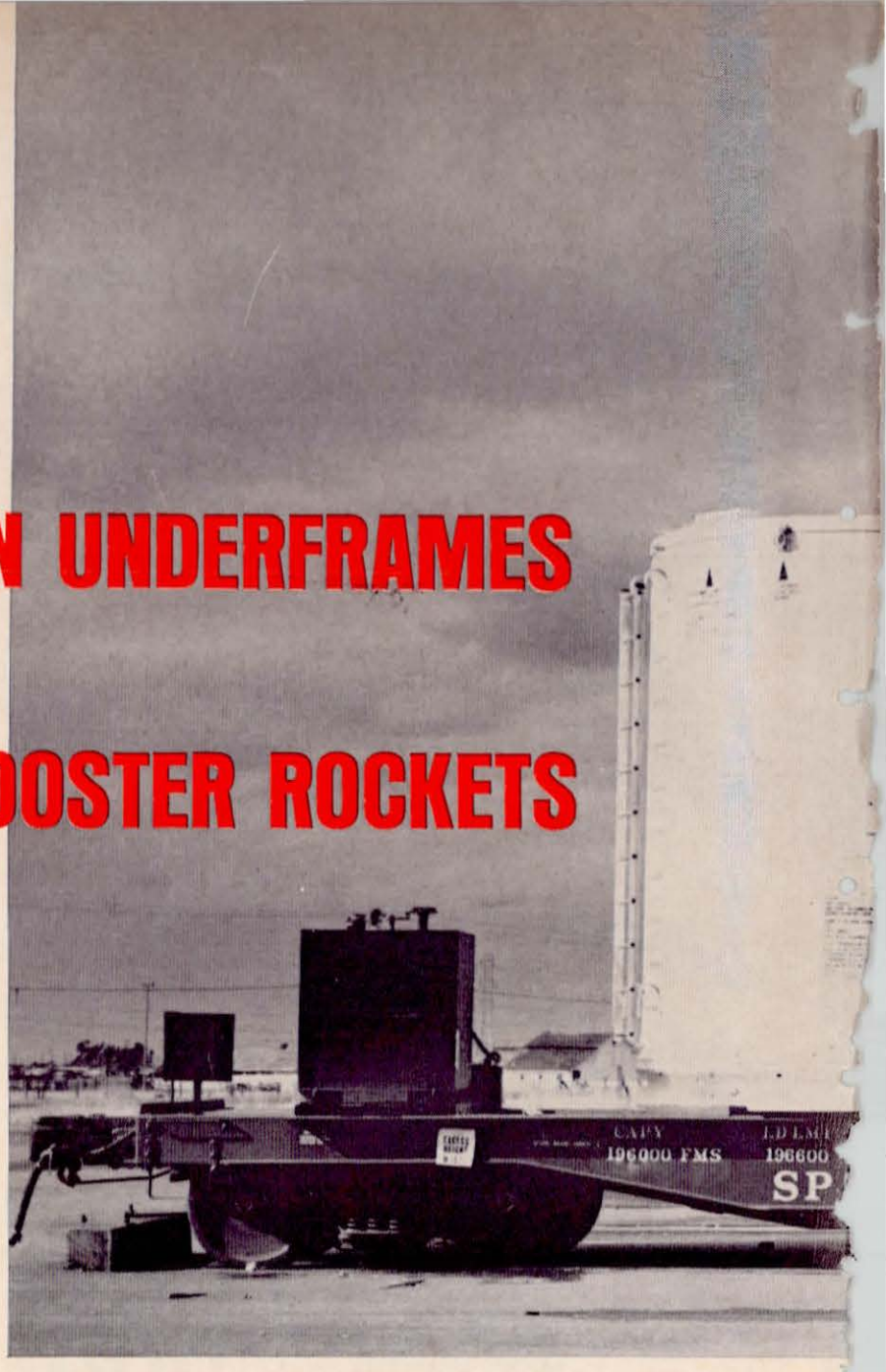
Seaboard

AIR LINE RAILROAD



HYDRA-CUSHION UNDERFRAMES protect TITAN III-C BOOSTER ROCKETS in 3400-mile shipments

Rocket components go safely by rail from California to Cape Kennedy



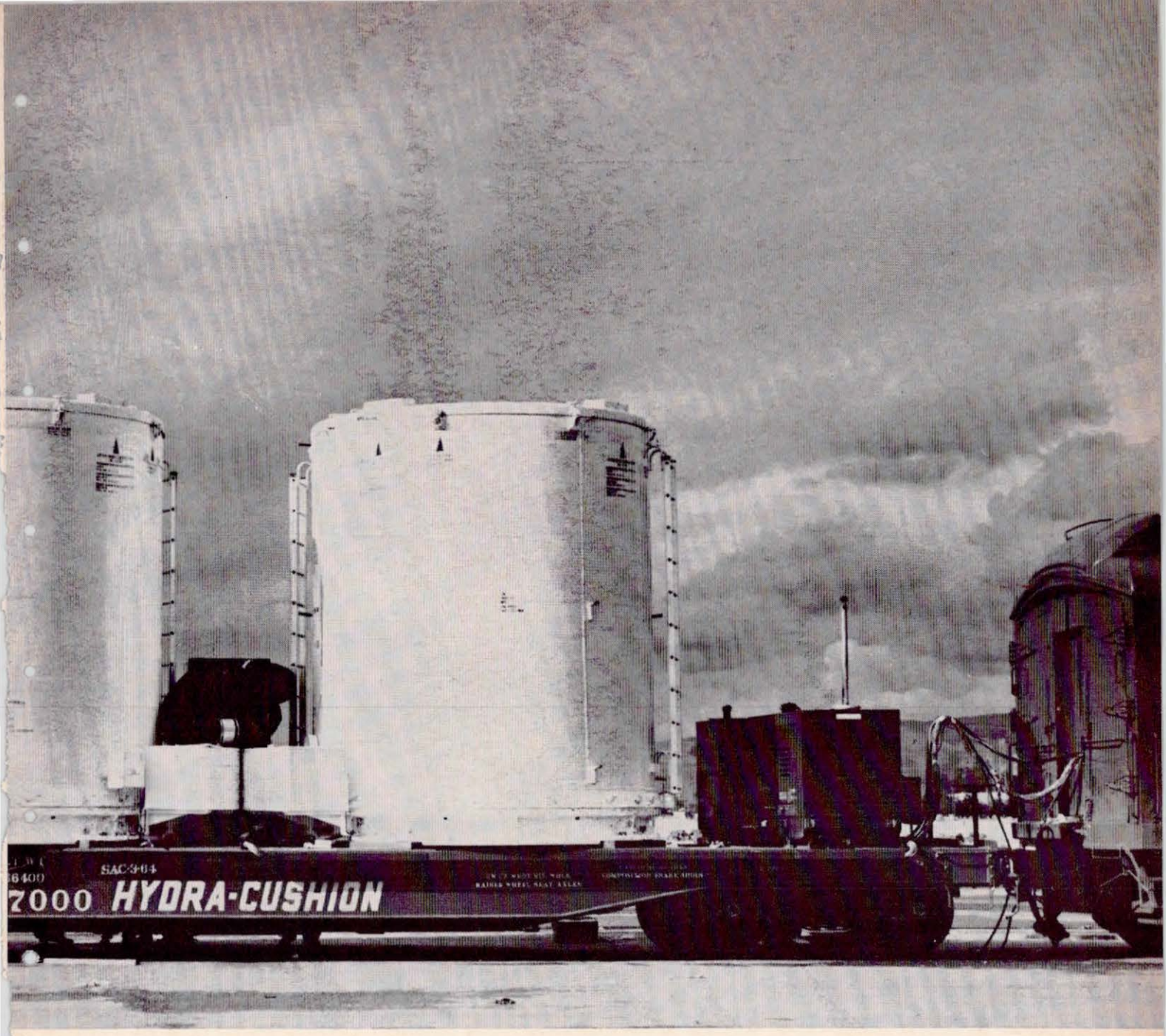
Cars equipped with Hydra-Cushion Underframes were the choice when rockets took to the rails—just as they have been the choice of 52 carriers and thousands of shippers for any kind of lading that requires protection against impact.

Solid motor assemblies of the Titan III-C, the Air Force's mightiest space-launch vehicle, are being shipped by rail from California to Cape Kennedy, Florida, via regularly scheduled freight trains over two routes involving eight carriers. Total net load on each flat car averages 197,600 pounds. The 47½ ft. cars and their delicate, expensive lading are protected from shock by Hydra-Cushion Underframes.

Railway Age, in its February 1, 1965 issue, says " . . . a test shipment proved 100% satisfactory over a variety of running conditions and terrain. During the test, the shipment was coupled into trains of varying lengths to prove the feasibility of regular movements under all kinds of conditions.

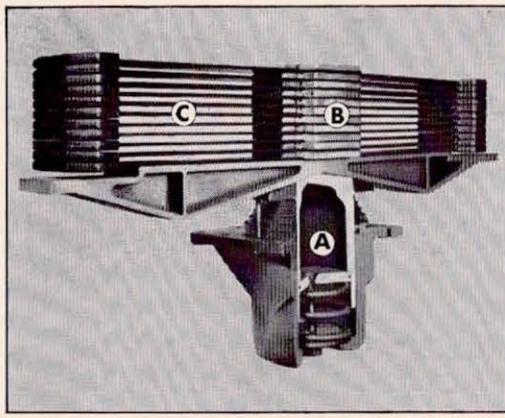
"First motor segments to be shipped were tested for longitudinal, vertical and lateral shock . . . test results were monitored enroute by technical personnel from the carrier, from the Air Force, the Bureau of Explosives, and United Technology Center, Division of United Aircraft Corporation, producer of the motors."

Machine Design, in its January 21, 1965 issue said "Standard flat cars wouldn't do . . . key to reduction of impact shocks is the use of Hydra-Cushion Underframes . . . a series of tests were performed with a loaded flat car . . . the top speed attained was slightly higher than 10 mph, and the instrumentation revealed that the shocks experienced by the equipment mounted on the Hydra-Cushion flat car were less than 2.5 g." (United Technology Center, the shipper, had specified a limit of 3 g's.)



We'd like to tell you more about advantages Hydra-Cushion* equipment holds for railroads and shippers. Write Hydra-Cushion Incorporated, Dept. M-4, 13101 Eckles Road, Plymouth, Michigan (48170) or 332 South Michigan Ave., Chicago, Illinois (60604). Canadian Representative: International Equipment Company Limited, Montreal.

*Reg. T.M. of Hydra-Cushion Incorporated



THIS COMBINATION MAKES THE BIG DIFFERENCE IN CAR CUSHIONING

The patented combination of hydraulic unit (A) and fixed and movable friction plates (B and C) in the Hydra-Cushion system multiplies the effect of oil pressure many times—obtaining maximum cushioning with low hydraulic pressures and avoiding the maintenance problems characteristic of high pressure systems. Its upright cylinder reduces possibility of oil dripping, and its short-travel reduces possibility of seal wear inherent in long-travel cylinders. Hydra-Cushion design minimizes curvature problems, coupling difficulties, and undesirable overhang.

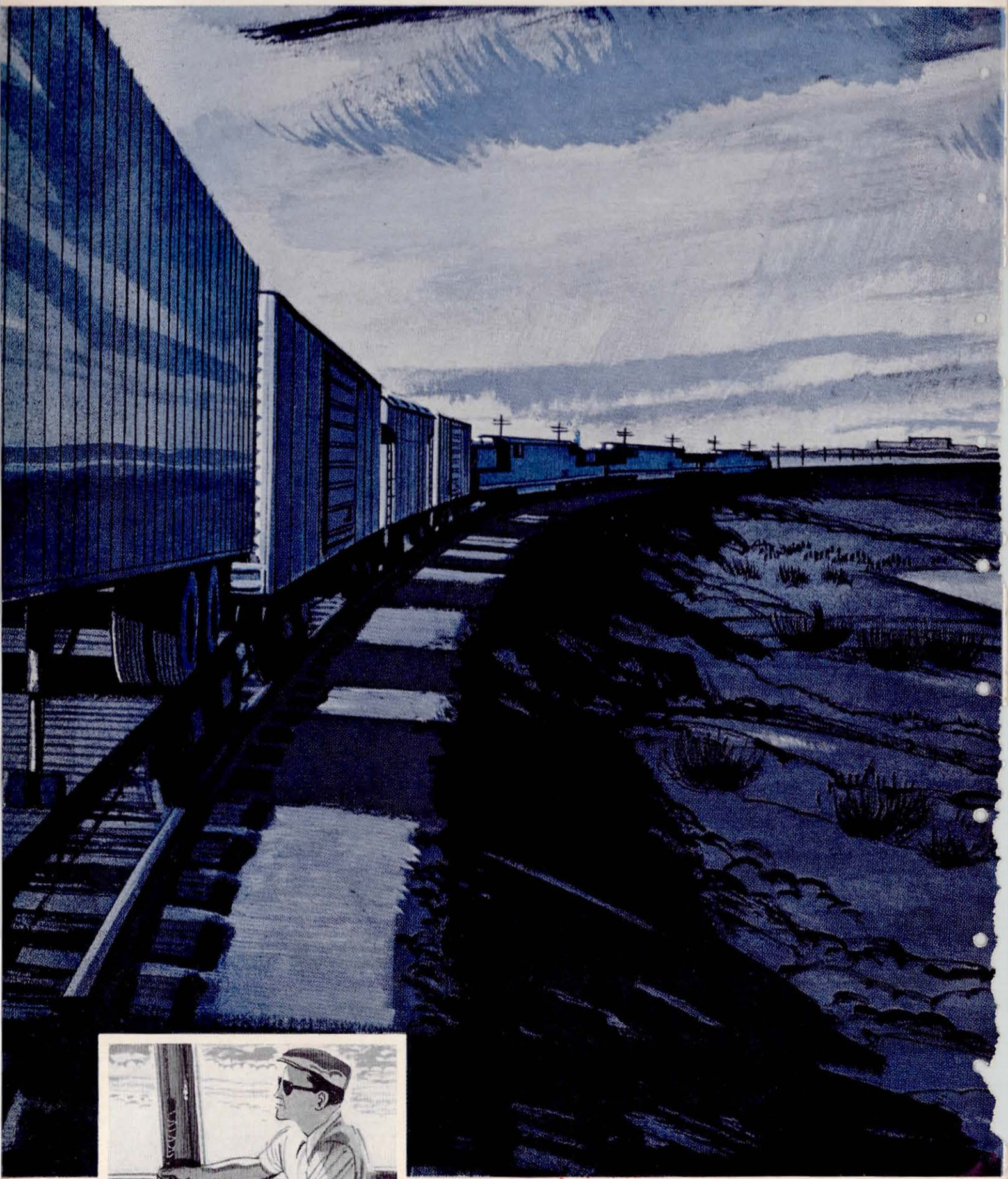
MORE RAILROADS OWN

CARS EQUIPPED WITH HYDRA-CUSHION UNDERFRAMES THAN ANY OTHER MODERN CUSHIONING DEVICE:

American Refrigerator Transit Co. • Atchison, Topeka & Santa Fe • Atlantic Coast Line • Baltimore & Ohio • Bangor & Aroostook • Canadian National • Canadian Pacific • Chesapeake & Ohio • Chicago & Eastern Illinois • Chicago, Burlington & Quincy • Chicago Freight Car Leasing • Chicago, Milwaukee, St. Paul & Pacific • Chicago, Rock Island & Pacific • Chicago, South Shore & South Bend • Clinchfield • Denver & Rio Grande Western • Detroit & Toledo Shore Line • Erie-Lackawanna • Evans Products Co. • Florida East Coast • Fruit Growers Express • Grand Trunk Western • Great Northern • Gulf, Mobile & Ohio • Linde Air Products • Louisville & Nashville • Maine Central • Missouri-Illinois • Missouri-Kansas-Texas • Missouri Pacific • New York Central • New York, Chicago & St. Louis • Norfolk & Western • North American Car • Chicago & North Western • NITX • Northern Pacific • Pacific Fruit Express • Pennsylvania • Pittsburgh & Lake Erie • Richmond, Fredericksburg & Potomac • St. Louis-San Francisco • St. Louis-Southwestern • Seaboard Airline • Soo Line • Southern • Southern Pacific • Texas & Pacific • U. S. Navy • Wabash • Western Fruit Express • Western Pacific • Green Bay & Western

TM **HYDRA-CUSHION® UNDERFRAMES**

Another report on railroad progress from American Oil Company



ROCK ISLAND'S HOT SHOT FREIGHT SERVICE CUTS DAY OFF THE CHICAGO-TEXAS RUN

The TSX, Rock Island's Texas Service Express, represents a selling tool that is getting increased attention from progressive railroad management.

The tool is faster freight service and the TSX is a particularly impressive example. By controlling the tonnage carried, the number of stops and the crew change time—and by specifying a steady 60 mph pace—Rock Island officials cut a full day from Chicago-Texas service. Second morning arrival replaced third morning arrival in Ft. Worth and Dallas.

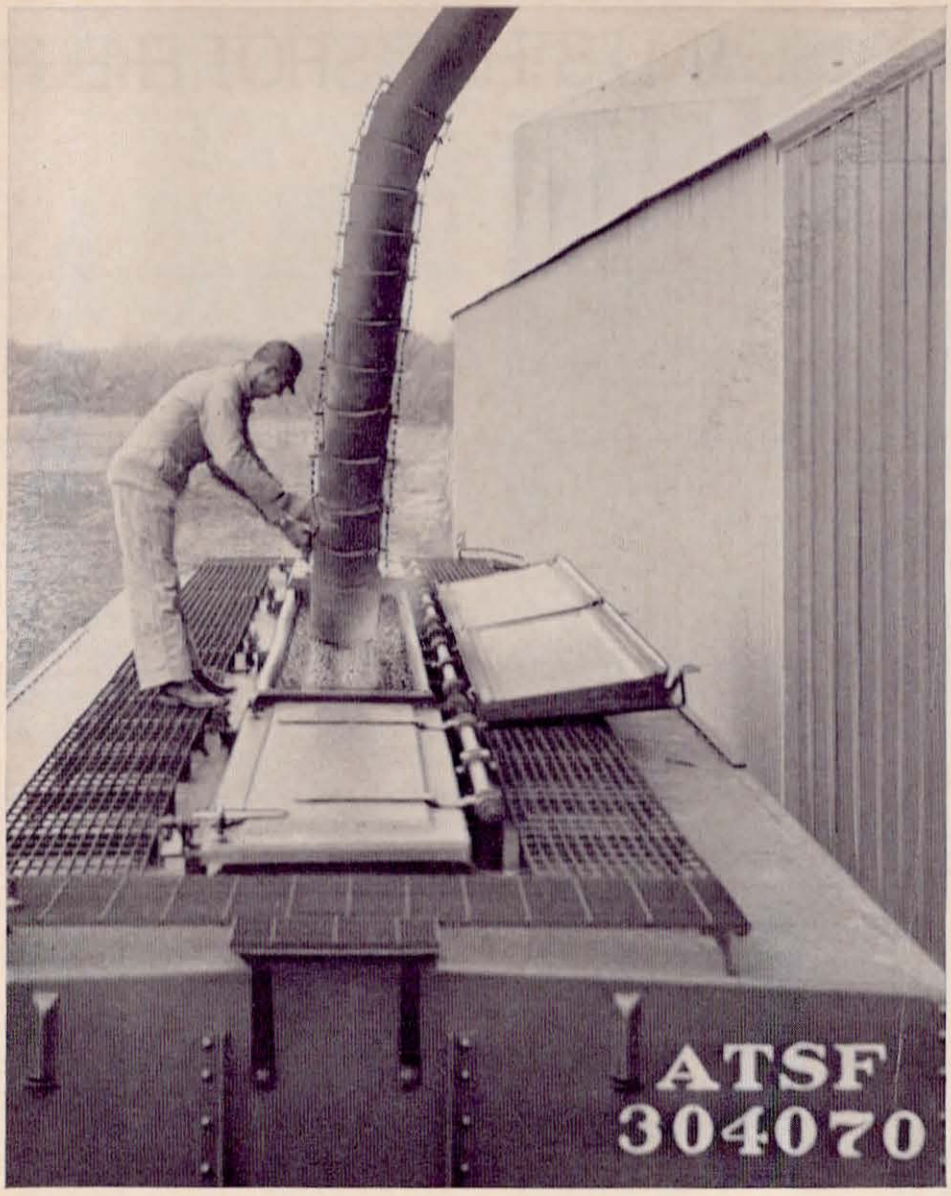
Included in the schedule is a new connection at Kansas City—a time-saver for shipments from Chicago to the West Coast. At Kansas City the TSX also picks up Texas-bound freight from the Twin Cities and St. Louis.

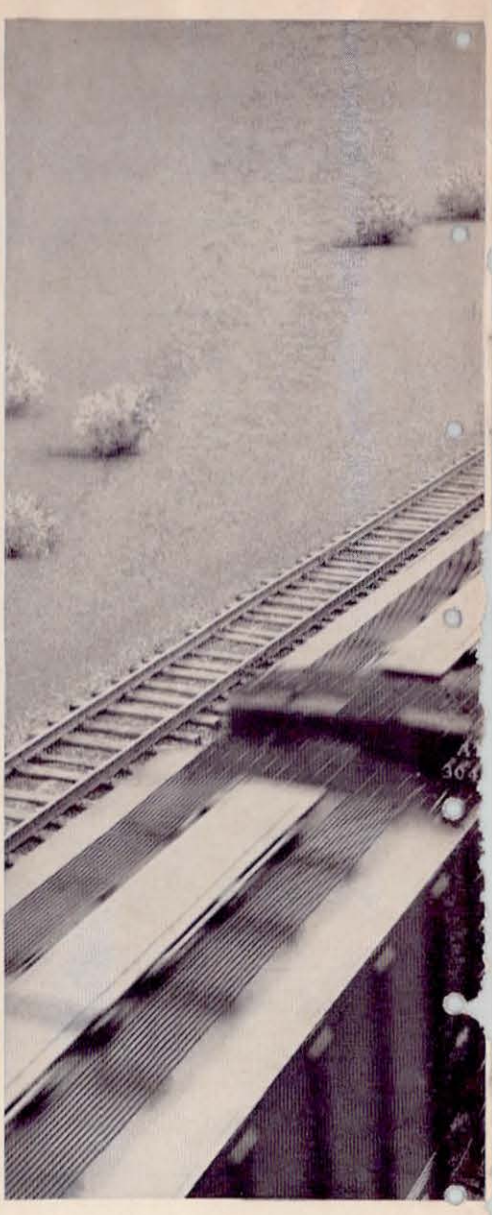
Faster freight service is just one of the many improvements that make Rock Island Lines "The railroad of planned progress . . . geared to the nation's future."

From American Oil Company, Rock Island and many other railroads expect —and get—more than fuels and lubricants. They also get specialized technical assistance, research-improved products and convenient supply points.

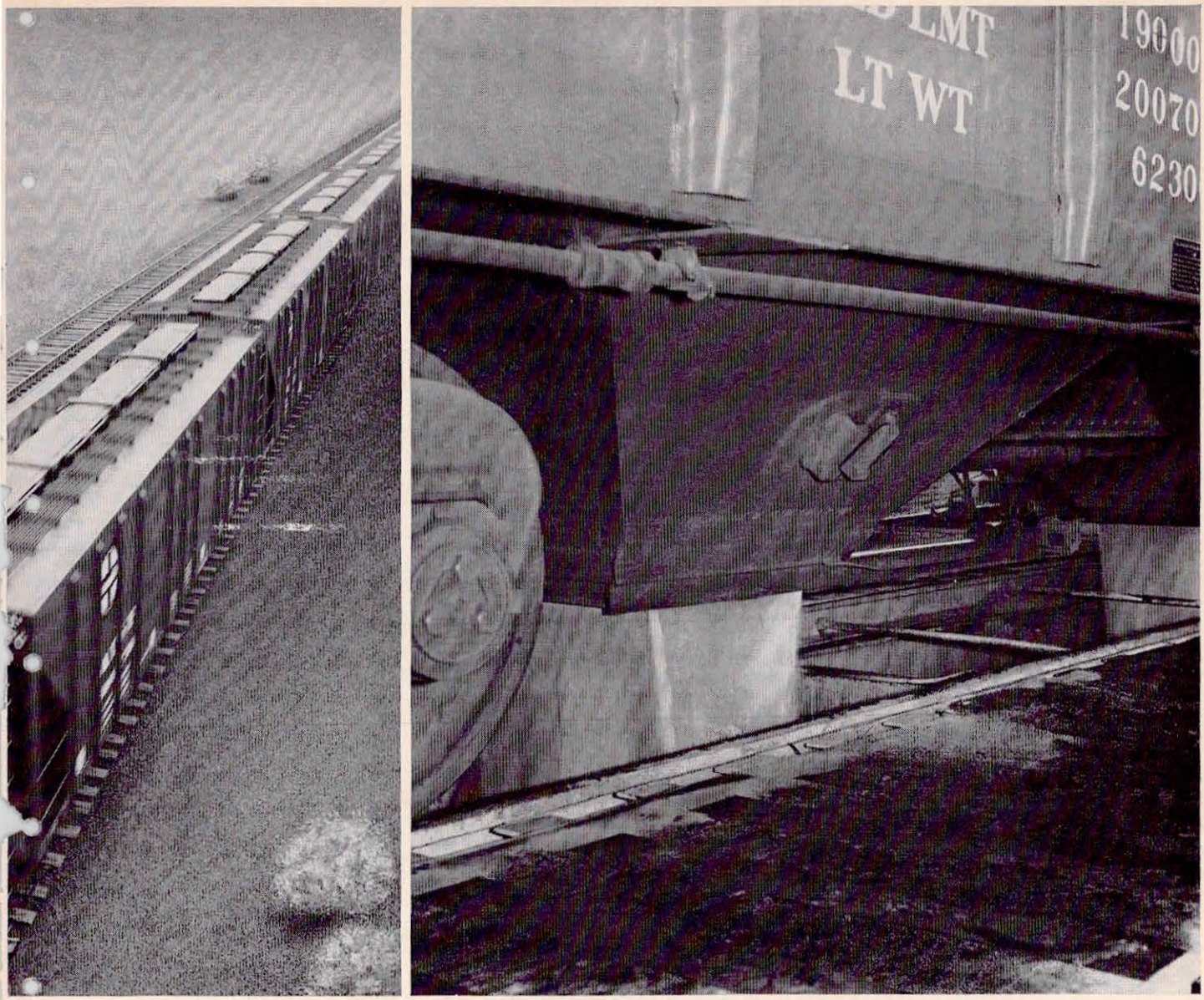
AMERICAN

AMERICAN OIL COMPANY
910 South Michigan Avenue, Chicago 80, Illinois





PS-2CDs
help sell bulk shippers on Santa Fe...
all the way



And no wonder! With PS-2CD Covered Hopper Cars by Pullman-Standard, the Santa Fe and many other shipper-conscious carriers specify the exact size and car features their shippers find most useful. PS-2CDs are available in varied ton and cubic capacities and with a wide range of alternate "customization" features. Rail users, whether they ship grains, dry chemicals or minerals, get all the benefits of PS-2CDs: high-capacity loads, fast and easy loading, fast and clean between-the-rails unloading and protection against dirt, weather and loss of lading.

And all PS-2CDs, regardless of size or alternates chosen, have the rugged, service-proved and shipper-preferred square configuration that gives maximum load-carrying capacity within a short car length. PS-2CD interiors are smooth with no ledges, laps or pockets to trap lading. They clean quickly and easily for fast turn-around and maximum car utilization.

Both railroads and shippers can rely on the design and construction of PS-2CDs. No wonder the Santa Fe has placed over 3000 PS-2CDs in service and that 22 additional carriers also are relying on the versatile PS-2CD to serve their shippers of dry bulk products. Write us for full PS-2CD information.

Additional railroad owners of PS-2CD Covered Hopper Cars: Akron, Canton and Youngstown • Chesapeake and Ohio • Chicago, Burlington and Quincy • Chicago Great Western • Chicago and North Western • Chicago, Milwaukee, St. Paul and Pacific • Chicago, Rock Island and Pacific • Denver and Rio Grande Western • Detroit, Toledo and Ironton • Great Northern • Illinois Central • Kansas City Southern • Louisville and Nashville • Minneapolis, Northfield and Southern • Missouri-Kansas-Texas • Monon • Norfolk and Western • Northern Pacific • Pennsylvania • St. Louis-San Francisco • Soo Line • Union Pacific

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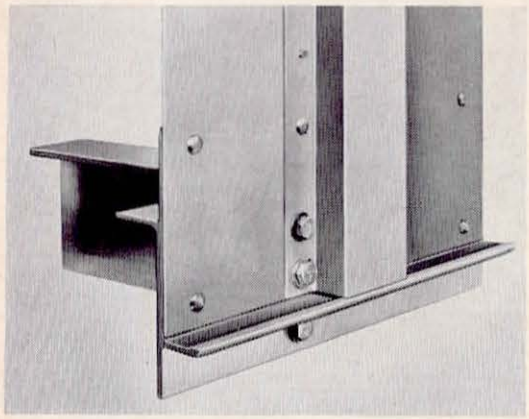
J. C. FENNELLY COMPANY, WEST COAST REPRESENTATIVE

What's new at Trailmobile?

Take a look—all new Exterior Post Vans ...the toughest, most rugged ever built!



Hefty Lower Rail Connection . . . much stronger, much more rigid than ever before. Four hi-tensile steel bolts attach posts to the rail. Three bolts attach the rail to crossmembers. Bolted construction and lower rail design facilitates removal and replacement of crossmembers.

When you're operating one of these completely redesigned husky new T/M Trailers, you can count on maximum performance under the roughest operating conditions. Every time.

They've been put through the mill with the most grueling tests ever devised. That's why we can promise less cost per mile, less down-time, a longer lifetime . . . a more profitable operation. (And there are *interchangeable* T/M components for your most exacting needs!)

Trailmobile's new Exterior Post Vans are just *one* of a complete new line of trailers—each the most ruggedly built of its kind. New Interior Post Vans, City Delivery Vans, Reefers, Doubles, Tanks, Flat-beds and Furniture Vans, too.

Yes, exciting things are going on at Trailmobile. Not only new trailers . . . but a new plant, new dealers, new Parts and Service facilities. They're all part of T/M's new look-ahead-look to provide America's shippers with the most modern products and services.

YOU CAN EXPECT MORE FROM . . . T/M TRAIL-MOBILE

TRAILMOBILE®

Cincinnati, Ohio 45209 • a division of Pullman Incorporated

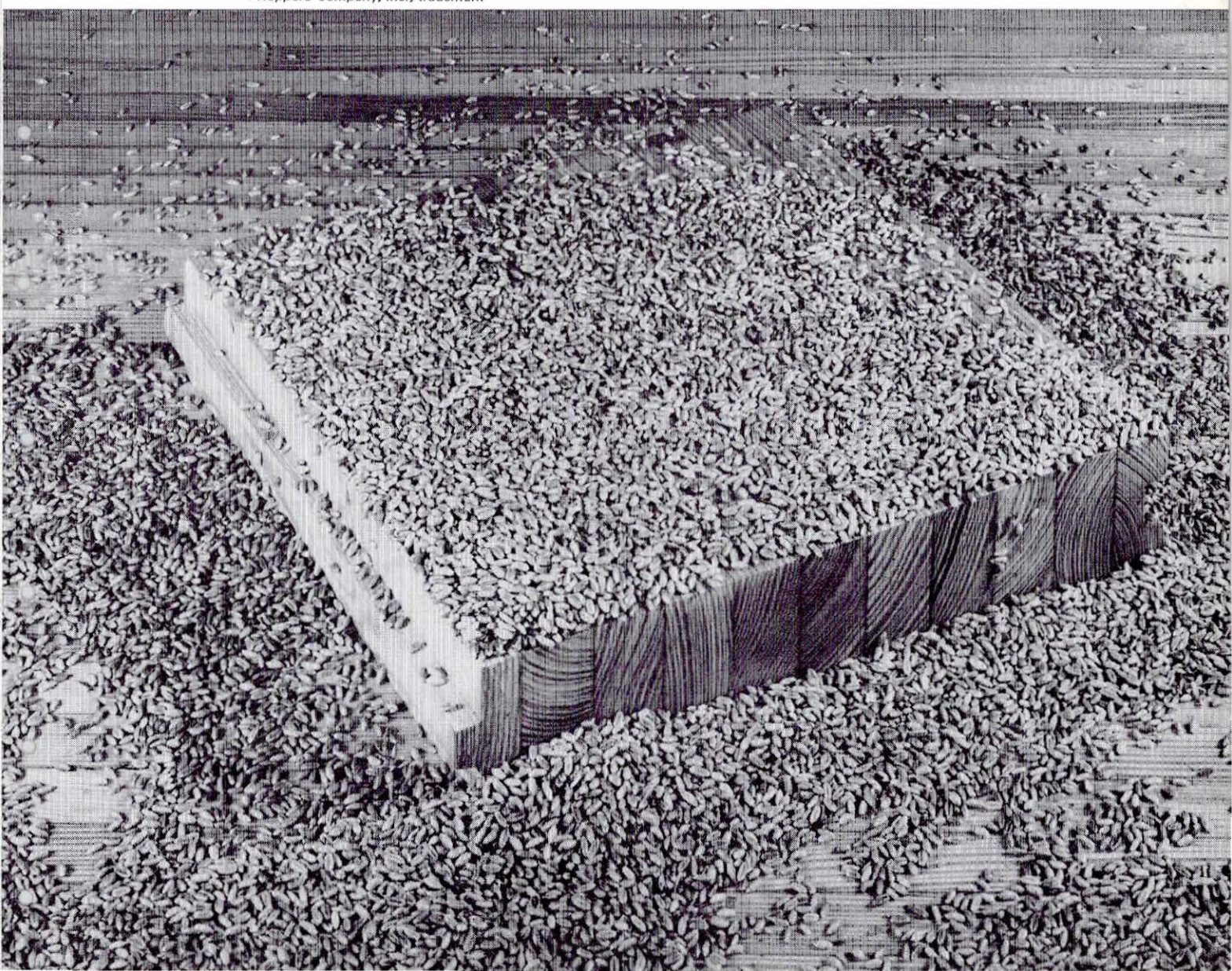
SALES, PARTS AND SERVICE IN ALL PRINCIPAL CITIES

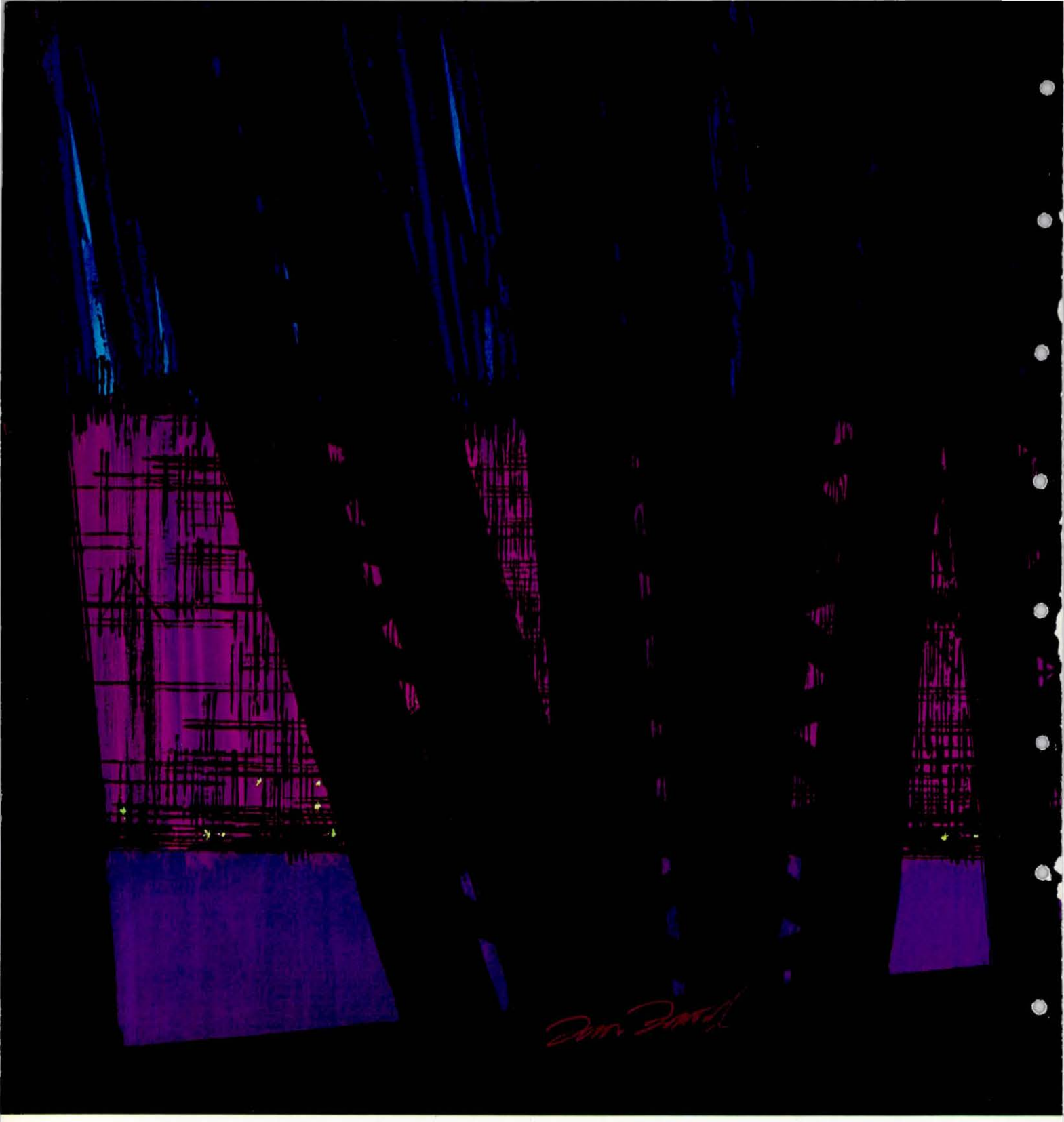
Alger-Deck... from pre-shrunk longleaf yellow pine. Seed-tight and steel-strong with muscle of lamination. A magic blend of ease and economy in installation. Girded by Cellon® pressure-treatment against rot, decay and insect attack... yet kitchen-safe for grain and other food shipments. The perfect marriage between nail and wood in boxcar flooring!

Get more information on Alger-Deck from Mr. Mabry Dozier, Century, Florida (AC-305) 256-3456.

ALGER-SULLIVAN COMPANY

®Koppers Company, Inc., trademark





Here's what new General Motors power looks like on the Rock Island Lines

It looks mighty good at the headend of a Rock Island freight because for every mile the train travels each new GM unit saves the railroad 5 to 10 cents in operating cost over older motive power. Multiply this saving by 20 (that's how many GP-35 locomotives the Rock Island is now using), then add up the yearly savings. And greater unit horsepower means you'll see fewer locomotives pulling heavier payloads and moving schedules faster. New GM power means greater progress for the Rock Island Lines.

ELECTRO-MOTIVE DIVISION · GENERAL MOTORS · LA GRANGE, ILLINOIS

HOME OF THE DIESEL LOCOMOTIVE · **In Canada:** General Motors Diesel Limited, London, Ontario

EM

1) Have you had any trouble in locating or employing people who may reasonably be expected, with time and experience, to move to or toward the top jobs in your department?

Yes	26
No	27

2) If you have, to what do you attribute the difficulty?

a) Lack of interest in traffic	13
b) Insufficient knowledge of the industrial traffic field	16
c) Inadequate salaries	11
d) A feeling that there is no "challenge" in traffic management	9
e) Belief that advancement may be too slow or too uncertain	14
f) A quantitative or qualitative lack of adequate traffic courses in schools and/or colleges	12

3) If a personnel procurement problem does exist, what would you suggest to remedy the situation? . . . . . See following text

Where do you find tomorrow's TMs?

If personnel problems exist, their solution depends chiefly on wider recognition of traffic's value, more and better training.

Industry does—or does not—face a serious problem in finding its top traffic managers of tomorrow. It all seems to depend on whom you talk to last.

To the extent that a problem does exist, it is attributable in some measure to each of the causes listed in the Poll questions (above)—but not overwhelmingly to any one of them.

• **Remedies.** Where there is a problem, Poll respondents think it can be solved by:

—Greater recognition on the part of company management of the real or potential value of a strong traffic department; and

—Increased activity by traffic men themselves in promotion of their profession.

Those remedies are about the only points on which there is any general measure of agreement in one of the most evenly divided Traffic Polls ever conducted by Railway Age (see tabulated replies). The division of opinion carries all the way through, between big companies, small companies and traffic associations, and between all major geographic areas. There is no type of industry, and no region, which appears to be either better or worse off than any other.

• **Factors.** Size and location do enter the picture, however. An eastern industrial traffic manager, for example, says his company "is not large. Therefore, traffic includes active participation in production and distribution. This, in turn, provides challenge and salary." Conversely, H. H. Kohn, traffic manager, Linwood Stone Products Co., Davenport, Iowa, points out that "smaller businesses do not always recognize the value and importance of a traffic department. A person trained in, or interested in, traffic work has no opportunity to show his value on a part-time basis."

Large companies frequently have the advantage of being able to train and develop traffic personnel from within their own organizations—a point brought out in almost identical language by H. T. Reed, director transportation, Line Material Industries, Milwaukee, and B. F. Perzanowski, traffic manager, International Silver Co., Meriden, Conn.

Location also plays some part, in the opinion of R. F. Treptow, general traffic manager, H. D. Lee Co., Kansas City, Mo. "There are," he writes, "more people in some areas than others. Where there are fewer traffic jobs there would be fewer people interested, and traffic per se would not create the same importance as in a major area."

• **Upgrade traffic.** There is wide agreement with (and no dissent from) the freely expressed opinion that whatever personnel problems may exist would largely disappear if traffic departments could be upgraded in the eyes of top company management.

"Too many business firms seem to consider traffic departments as unwanted step-children, instead of utilizing their potentials for making and saving money," says a midwesterner who asks not to be quoted by name. "If it were necessary to replace personnal," an upstate New Yorker agrees, "it would be difficult because of management's failure to place traffic in the proper perspective with relation to importance and remuneration of other departments."

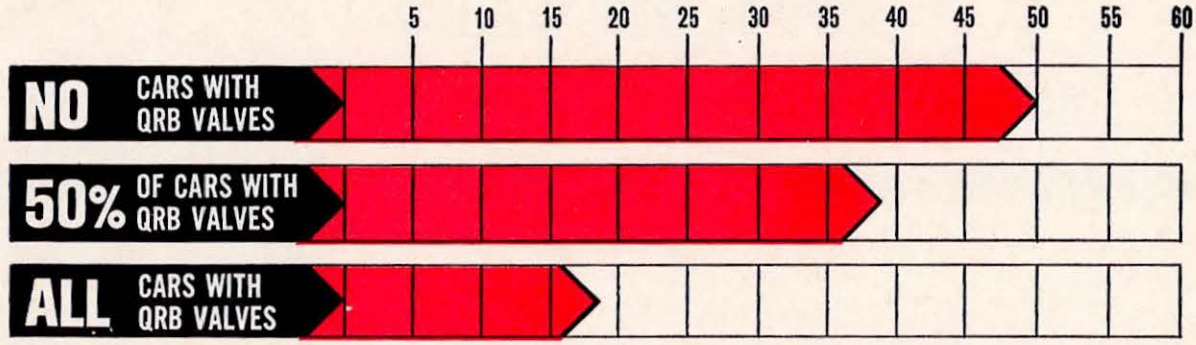
The transportation department manager for a midwestern chamber of commerce says he has, "many times, heard the complaint that top management will not, or feel they should not, put the traffic manager on the top management team." And an eastern industrialist thinks candidates for traffic jobs believe advancement to be slow or uncertain, because of a "general feeling that the traffic function is being downgraded in most companies."

A New Englander suggests that "top management of industrial concerns needs to be educated about the value of a good traffic department. This must come from outside sources as well as within."

• **What TMs can do.** His last sentence implies a point which is strongly

(*Continued on page 35*)

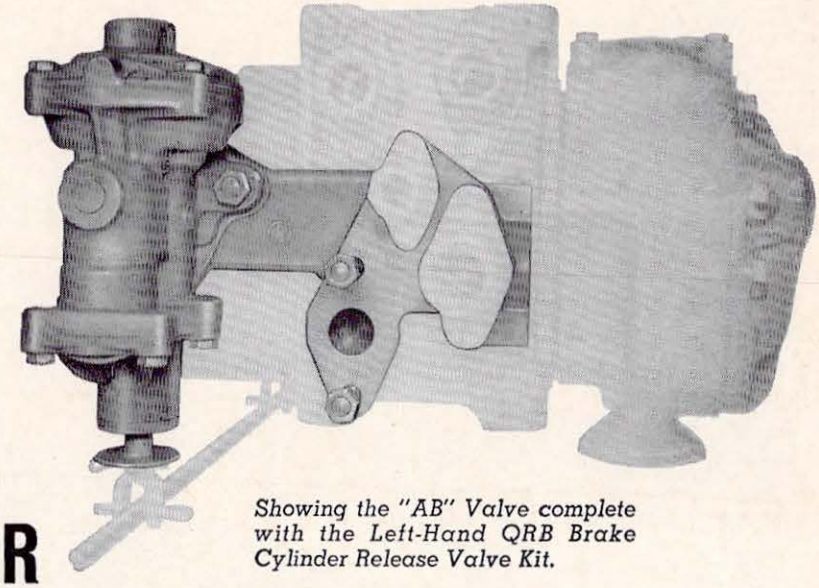
Will You Accept Lower Terminal Costs For Your 150 Car Freight Trains?



TIME IN MINUTES TO CHARGE BRAKE SYSTEM FOR TERMINAL TEST (4 psi/min. B.P. Leakage)

QRB

BRAKE CYLINDER RELEASE VALVE KIT



Showing the "AB" Valve complete with the Left-Hand QRB Brake Cylinder Release Valve Kit.

- The QRB Brake Cylinder Release Valve Kits, (Left-Hand or Right-Hand), can be readily mounted on ALL existing AB Valve pipe brackets.
- The QRB retains the basic and proven valvular construction and snap action of earlier models in an advanced new design.
- The QRB utilizes internal parts of the earlier QRR valve . . . thus providing minimum OBSOLESCENCE of Parts Stocks.

A saving of over half an hour translated into dollars and cents represents an important economy. Every car equipped with the new QRB Brake Cylinder Release Valve contributes to this saving. When ALL cars of a 150 car train are so equipped, the A.A.R. required terminal test takes only 18 minutes versus 50 minutes where NO cars have Brake Cylinder Release Valves.

The QRB Valve, and Right-Hand or Left-Hand Adapters, developed by The New York Air Brake Company, are certified by the A.A.R. to meet all requirements of the new specifications. They are available in complete Kit form for convenience in ordering and applying to existing cars.

PRI MEMBER

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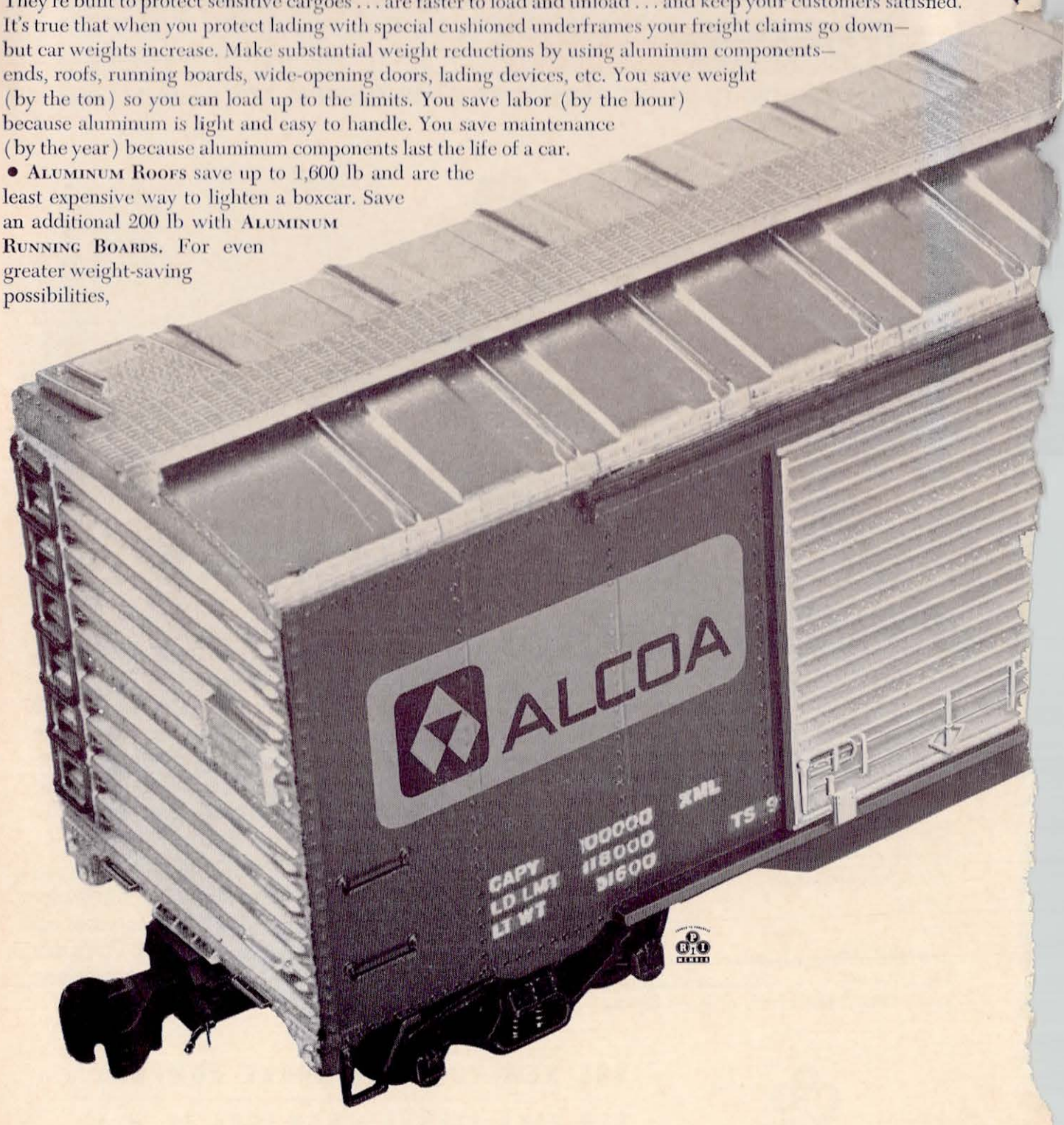
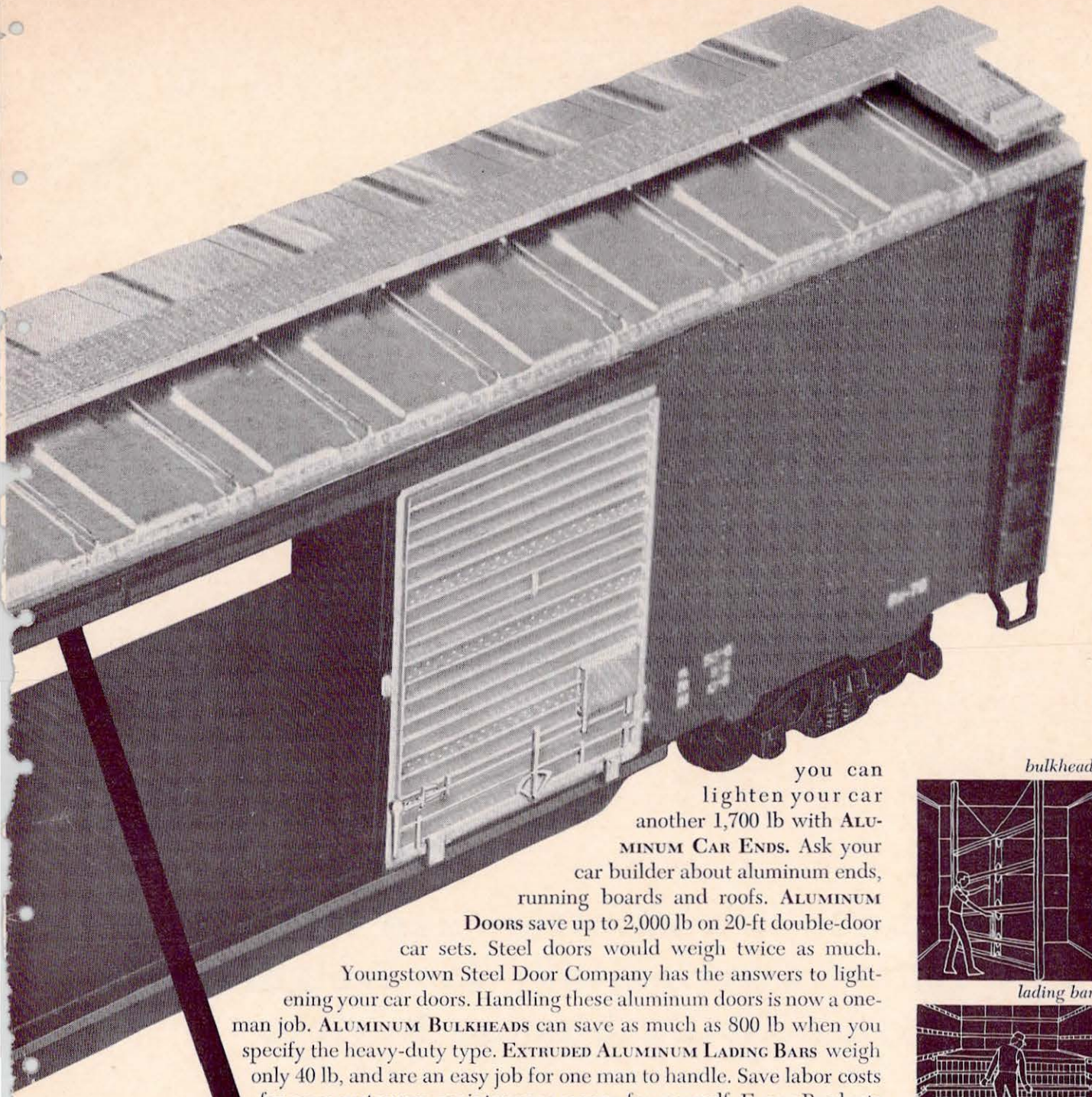
• **Aluminum Roofs** save up to 1,600 lb and are the least expensive way to lighten a boxcar. Save an additional 200 lb with **Aluminum Running Boards.** For even greater weight-saving possibilities,





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TOMORROW'S TMs

(*Continued from page 30*)

stressed in many replies, and on which there is also general agreement—that, if industrial traffic work is not regarded as highly as its practitioners think it should be, it is largely up to traffic managers themselves to improve the situation.

"Traffic and transportation managers must upgrade their stature and that of their departments by excellent service and selling the worth of this service," says the transportation manager for a midwestern industry. "This will lead to higher incomes, titles and competition for the jobs, which wiil in turn solve the personnel procurement problem."

"It is primarily a job for the individual in charge of traffic," another midwesterner agrees, "to sell its importance to his own management, and, through outside organizations, to management as a whole and to educational institutions."

How the latter may be done is suggested in closely corresponding replies from opposite ends of the country—the San Francisco and Boston areas. "Those of us who are established in traffic," a man from one writes, "should lend our unqualified support to such organizations as the American Society of Traffic & Transportation, Delta Nu Alpha, and to our local schools and junior colleges endeavoring to implement and encourage transportation education. It is up to us to promote and develop traffic courses in schools and colleges, and at the same time encourage young men to enroll in them."

From the opposite coast comes the suggestion that industrial traffic men should "develop an interest in the field by spreading the word about ourselves."

"Traffic people, industrial and carrier," this respondent writes, "talk a lot about their importance to our economic well-being, but it is always to each other. Our traffic clubs, AST&T and DNA have some fine programs promoting our profession, but the only people reached are transportation people. We have to reach two groups. First, we must impress top management with our importance. This will enhance our position, improve it and make the transportation career attractive. Second, we must interest young people in entering the field as a career."

[Much of this, of course, is already being done. Reed, for example, calls attention to the fact that "six years ago the Milwaukee Traffic Club and the Transportation Club of Milwaukee published a pamphlet to be used by guidance counselors and high school administrators, to acquaint them, and students, with traffic and transportation work. The Milwaukee public schools have used the booklet, and it has been distributed widely throughout the country for similar use. However, greater emphasis should be put on informing high school administrators and pupils on traffic and transportation as a life career."]

● **More college courses.** One way of accomplishing necessary training, many answers suggest, is more traffic courses in schools and colleges.

"Colleges must be sold on the need for trained personnel in the industrial traffic field, and provide the necessary traffic courses," says the traffic director for one of the country's largest companies. He adds that "colleges can help by providing adequate information to undergraduates about opportunities in the traffic field, and urging them to consider it."

His words are essentially echoed by E. F. Mundy, vice president, National Biscuit Co., New York, who calls for "more salesmanship, on both high school and college levels." This, Mundy suggests, might be a traffic club activity during the annual Transportation Week in May. Why, he asks, shouldn't we "sell this wonderful and rewarding field, with challenge unlimited."

Graduate courses, too

Frank Tighe, assistant general traffic manager, Union Carbide Corp., New York, calls for "courses in traffic, transportation and distribution starting at high school level and continuing in colleges for undergraduates and graduates, plus internal training and incentive programs." (Tighe also sees a need for "better communication upward from traffic managers to their bosses. TMs" he says, "should learn top management lingo and methods.")

"A program similar to the one the New York Life Insurance Company undertook a few years ago, in which they advertised outlines of various fields of work" is proposed by F. J. West, TM, Drackett Co., Cincinnati.

There appears to be little disposition, however, to criticize colleges for the present number or nature of traffic courses. "I suspect," one respondent writes, "that the number of jobs available requiring specialized training is too small to warrant more full-scale college courses."

Another thinks "the lack of knowledge by the general public is directly responsible for the small number of college students interested in the field. Our colleges and universities cannot allocate space and funds for teaching the subject unless the demand is greater." This leads him to the conclusion that "we need more public awareness of the traffic field. Programs like National Transportation Week observance are a big step forward, but more help on our public relations is a vital need."

On the other hand, an eastern industrial traffic man warns that too much college training can sometimes be a disadvantage. "With so much emphasis on college graduates," he points out, "getting good rate men will become more and more of a problem. A number of TMs have told me that it is very difficult to keep a college graduate on strictly rate work."

● **On-the-job training.** College training alone, some men suggest, may not be enough. A New England respondent says he "prefers to find individuals with an understanding of management and management principles, with a minor knowledge of transportation. We have the department and facilities to break in and teach transportation and traffic skills and techniques."

A midwesterner points out that "it takes at least five years of concentrated hard digging after getting into the traffic field with industry. Progress is often faster and more glamorous in other departments."

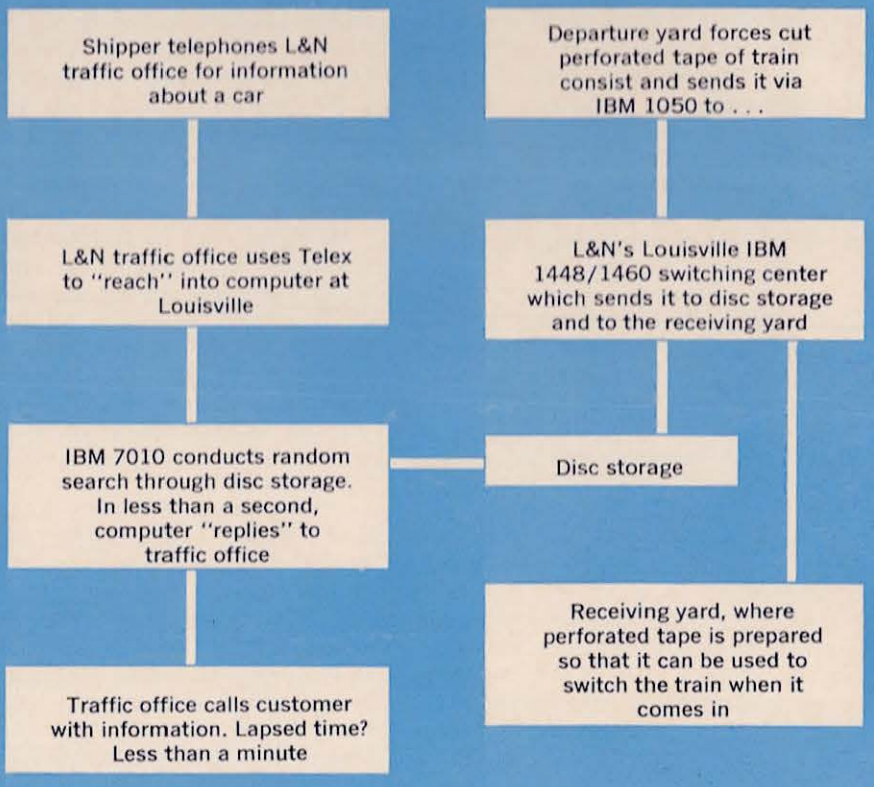
A strong advocate of on-the-job training is G. O. Wilson, GTM, Gamble-Skogmo, Minneapolis, who urges "more extensive in-plant or within-company training of promotable traffic personnel. Open up the promotable possibilities within the company so qualified men are not stymied in traffic only. The broader distribution concept should be considered both by management and the individual as it pertains to training, development, recruitment and advancement. The individual has a responsibility, too, to train himself and sell himself to management."

● **Broader orientation needed.** Some men feel technical traffic training alone is not enough, regardless of how it may be acquired. Something more is needed, they say. An Ohioan writes, for example, that "It is possible to find people with a good technical background in traffic, but it is difficult to find those with this background combined with the broader experience and objective approach which is essential to the proper management of the industrial traffic function in its proper relationship to total company activity. Most college traffic courses stress too much the technical details, with the result that graduates are technicians and specialists—not potential managers."

● **Salaries.** Salary levels in industrial traffic management appear to be

(*Continued on page 69*)

How shipper Telex system works


Shipper telephones L&N traffic office for information about a car
L&N traffic office uses Telex to "reach" into computer at Louisville
IBM 7010 conducts random search through disc storage. In less than a second, computer "replies" to traffic office
Traffic office calls customer with information. Lapsed time? Less than a minute
Departure yard forces cut perforated tape of train consist and sends it via IBM 1050 to . . .
L&N's Louisville IBM 1448/1460 switching center which sends it to disc storage and to the receiving yard
Disc storage
Receiving yard, where perforated tape is prepared so that it can be used to switch the train when it comes in

Right: L&N's network of IBM 1050s funnels basic data into road's computer center at Louisville – around the clock. Left: network of Telex machines in L&N traffic offices (on-line and off-line) can reach directly into road's computer to find out where a car is. Cars frequently are reported as moving in trains that have not arrived at terminals at time of query.

TO KEEP SHIPPERS INFORMED:

L&N reaches for real-time data

Computer memory is automatically searched for the status of any car being handled; data goes instantly between traffic offices and computer center.

On April 12 some of the Louisville & Nashville's top officers met in a small room on the seventh floor of the railroad's headquarters at Louisville. It was a room just off the road's computer center.

Through the glass walls of the room they could see the L&N's computers and attendant machines—busy turning out payrolls, spinning tapes and doing the staccato printing of reports characteristic of railroad computer centers everywhere.

But the L&N department heads were interested only in a small bank of Telex machines—machines with direct access to Western Union lines. The Telex machines, connected with similar machines in L&N traffic offices across the country, were going to be used in a dress rehearsal to "quiz" the computer.

What the L&N officers saw that morning did not look like much. But what they saw ushered the L&N into the beginning of what computer systems men call the "real-time" era of railroad operations.

Triggered by a message from L&N's Seattle traffic office, one of the Telex machines at Louisville (set up to monitor such incoming messages) clattered for a few seconds and then stopped.

WESTERN UNION TELEX SERVICE

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LN COMPUTER LVL

L&N RR LSA

(LN   128206GATX  69025GATX1 18579SAL   25041LN    88502)

 LN   128206 H 0177000060011 4L50403181
 GATX 69025 T 0128ACL  MONT L50331142  0029CINT NYC  L50403063
 GATX 18579 T 0005GMO  NOLA E50405052
 SAL  25041 B 0005BB   BHAM L50403102  012100389TM447L5040 4041
 LN   88502 H10247VB242VB1 44L50403201
$
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In the above example inquiries were made on five cars (shown enclosed in parentheses). The computer gave the replies shown in the succeeding lines. The first example is a detailed decoding; the remaining four examples are in narrative form.

LN 128206. . Car Initial and Number
H. . . . . .Kind of Car (Hopper)
0177. . . . . .Train Number in which LN 128206 is moving
00006. . . . . .Originating Station of this movement (Louisville, Ky.)
00114. . . . . .Destination Station of this movement (Bowling Green, Ky.)
L. . . . . .Loaded or Empty (L or E)
5040318. . . .Date of Movement (April 3, 1965, at 6:00 p.m.)
1. . . . . .Type of Movement
1 = Line of Road Movement
Other Possibilities
2 = Interchange Received
3 = Interchange Delivered
4 = Junction (between foreign roads)

GATX 69025 is a tank car received from the ACL at Montgomery in interchange No. 128, March 31, 1965, at 2:00 p.m. Its last L&N handling is indicated to be a delivery to the NYC at Cincinnati on April 3, 1965, at 6:00 a.m. It was received loaded and delivered loaded.

GATX 18579 is another tank car on which the inquirer desired information on only the last move. The computer tells us that it was received from the GM&O at New Orleans in interchange No. 5 on April 5, 1965, at 5:00 a.m. The car is shown to be empty.

SAL 25041 is shown as a loaded box car received from the Birmingham Belt at Birmingham, Ala., in interchange No. 5 on April 3, 1965, at 10:00 a.m. and is on line, moving in train No. 121 from Birmingham to Tuscaloosa on April 4, 1965, at 4:00 a.m.

L&N 88502 is a hopper car loaded on line with coal, last moved in train 247 from North Hazard, Ky., to Ravenna, Ky., April 3, 1965, at 8:00 p.m.

A few seconds later a message from the road's Cincinnati traffic office touched off another quick burst of typing in a Telex machine.

That was all. Outside the Telex room, in the computer center, nothing seemed to have happened. Normal work went on. But, what actually happened was an historic moment in railroad operations.

In split-second interruptions so quick they didn't apparently stop the computer center's normal work, L&N's computer had, in each case, performed some uncanny sleuthing for a customer in a faraway place:

—The computer replied to the Seattle office in response to a question about a carload of apples. Instantaneously, the Seattle traffic office got the answer from the Louisville computer. The car was rolling in a train due into Atlanta that afternoon. The shipper could divert his car toward a customer in South Carolina.

—In a few thousandths of a second the computer searched for, found and replied to a question from L&N's Cincinnati office. It wanted to know the whereabouts of a car of plywood. The computer told the traffic office that the car had left L&N's DeCoursey Yard eastbound half-an-hour before.

● **Telex network in.** The unbelievable "conversations" going on between L&N traffic men and the roomful of blinking consoles, whirling discs and tape-drives in Louisville presumably gratified the L&N officers. And well they might. The operation they had watched on L&N was the first major sign of the real-time computer system toward which the road's computer specialists have worked for a year-and-a-half.

The whole set-up became possible in early April when L&N completed "de-bugging" the program of instructions to its computer as to how queries should be handled from the network of 45 Telex machines that the road has installed in its on-line and off-line traffic offices.

● **On top of another network.** And that de-bugging effort had moved in tandem with a massive educational program carried on to educate L&N operating and yard forces to the use of machines that keep the computer center at Louisville informed within minutes every time a wheel turns on the railroad. For the Telex network operates on the shoulders of another network of machines L&N has been installing in yard and division offices: a network of IBM 1050 machines that, around-the-clock, 365 days a year, feeds advance train consists into the Louisville computer with the machine-gun rapidity possible with modern transmission capability. Thus, L&N's computer at Louisville literally "knows" and remembers whenever a car moves—minutes after it leaves a yard. The computer, in fact, gives reports on cars that are rolling between terminals at the moment the car's whereabouts are queried. When L&N has its entire IBM 1050 network installed, all car records will be less than two hours old, say L&N experts.

● **More to come.** The network of Telex machines is complete in L&N's traffic agencies, except for two off-line and four on-line agencies where wire service is not available for Telex service. Telex machines will be installed in those agencies as soon as wire service is available.

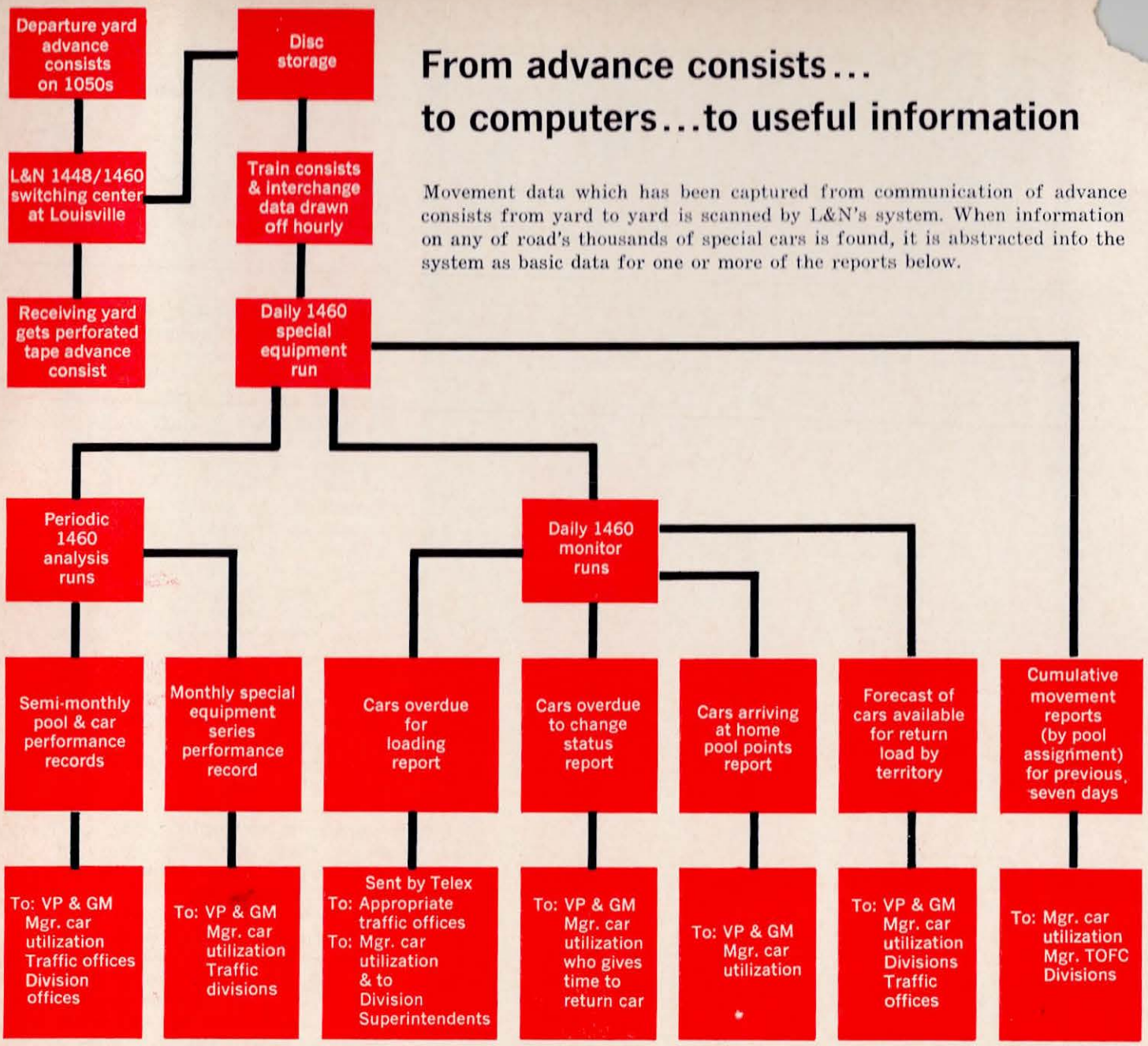
The network of IBM 1050 machines is already installed and working on the northern half of the L&N system—32 machines at 21 locations. By July 1 the L&N will have 62 of the 1050s operating at 43 locations. Places not presently equipped with the 1050s are functioning with regular Teletype equipment sending advance consist transmissions to the computer center.

When the long-range plan for the 1050 network is completed, all 62 of the installations will be cut into the tracing network, giving them the ability to query the Louisville computer. That will give L&N 107 points that can "talk" to the computer for information about cars. There will be 113 points ultimately, when the traffic offices without wire facilities get Telex service.

● **Message switching is key.** At the

From advance consists... to computers...to useful information

Movement data which has been captured from communication of advance consists from yard to yard is scanned by L&N's system. When information on any of road's thousands of special cars is found, it is abstracted into the system as basic data for one or more of the reports below.


Departure yard advance consists on 1050s
Disc storage
L&N 1448/1460 switching center at Louisville
Train consists & interchange data drawn off hourly
Receiving yard gets perforated tape advance consist
Daily 1460 special equipment run
Periodic 1460 analysis runs
Daily 1460 monitor runs
Semi-monthly pool & car performance records
Monthly special equipment series performance record
Cars overdue for loading report
Cars overdue to change status report
Cars arriving at home pool points report
Forecast of cars available for return load by territory
Cumulative movement reports (by pool assignment) for previous seven days
To: VP & GM Mgr. car utilization Traffic offices Division offices
To: VP & GM Mgr. car utilization Traffic divisions
Sent by Telex To: Appropriate traffic offices To: Mgr. car utilization & to Division Superintendents
To: VP & GM Mgr. car utilization who gives time to return car
To: VP & GM Mgr. car utilization
To: VP & GM Mgr. car utilization Divisions Traffic offices
To: Mgr. car utilization Mgr. TOFC Divisions

heart of the whole operation is an IBM 1448/1460 computer switching machine that receives and directs messages properly with lightning-quick speed and unfailing accuracy. If the message is an advance train consist from one of the 1050-equipped yards, the computer dumps the whole message into the disc memory unit—and simultaneously transmits the same message to the yard for which the train is destined. There, yard forces use the data to expedite classification and servicing of the cars in the train when it arrives.

If the message is from one of the L&N's traffic offices, requesting car information, the Telex automatically "hunts" for an open circuit and then triggers a random search of the computer's disc memory for the data. Then the information is transmitted back to the traffic office in less than a minute. The tracing system is designed for reception and response to messages within seconds.

● **Administrative messages.** The switching center also directs the flow of administrative messages between Telex terminals and between the Telex terminals and a message center at Louisville. At L&N headquarters in Louisville anybody can dial a "dictating pool" and dictate a message that is then sent through the message switching center.

When the Telex network was designed so that L&N's traffic offices could be cut into the road's computer, the L&N took a giant step toward a real-time data system.

The new set-up replaced a car tracing system that was, by most railroad standards, already very good.

Formerly, Telex machines in traffic offices transmitted inquiries to L&N's central tracing bureau at Louisville. Via a hard copy and a perforated 5-channel tape of the query, tracing bureau clerks converted the question to punched cards. The cards were then taken to the computer center and fed into the computer—which, at that time, was fed train consists three times a day. The cards would be punched with the latest data in the machine concerning the cars being traced. The clerk would then go back to the tracing bureau, place the cards in a telegraphic card-reader and transmit the data via Telex back to the inquiring traffic office.

Says L&N Director of Data Proc-

essing John Harmon, "It really was a pretty good system—and we had it working beautifully. But, it was, at best, an interim set-up as we worked toward something that would give us data as current as the time on your wristwatch." L&N's present system is, itself, a more advanced interim system—with the 1050 imput controlled through an IBM 1448/1460 and the Telex system connected to a 7010/1301 computer system. Ultimately, both functions will be handled by the IBM 360 computers L&N expects to install next year.

● **Minutes off—now seconds.** Basic to the whole new system on L&N are the direct connections the computer makes between yards and terminals on the one hand and the road's traffic offices on the other. Instead of dumping train consists into the computer three times a day, the present arrangement keeps advance train consists pouring into the computer constantly—around-the-clock. Gaps in information that formerly could result in as much as a 24-hour loss of contact with a car (as, for instance, when a query was made a few minutes before a new batch of consists containing a record of the car were dumped into the computer) are not possible now. Now, within a second after a 1050 in an L&N yard has sent an advance consist to the computer, the data are available. Every on-line L&N traffic office now operates under the new Telex inquiry plan effective April 19 and can have an instantaneous answer from the computer center for car tracing. The same instantaneous message service will be subsequently afforded to all off-line traffic offices as they are progressively cut into the new system.

The Telex direct inquiry system will permit L&N traffic offices to ask for locations on one to seven cars at a time. The Telex network is most economically used by the multiple inquiry plan.

The direct queries trigger records that have never before been available through the computer, thanks to L&N's network of 1050 machines in yards and terminals that feed the data to the computers. These records include:

—The status of all cars in yard complexes—yard movements of cars that have been shopped, are on hold tracks and so forth.

—Placement times on cars already placed on team tracks and private sidings.

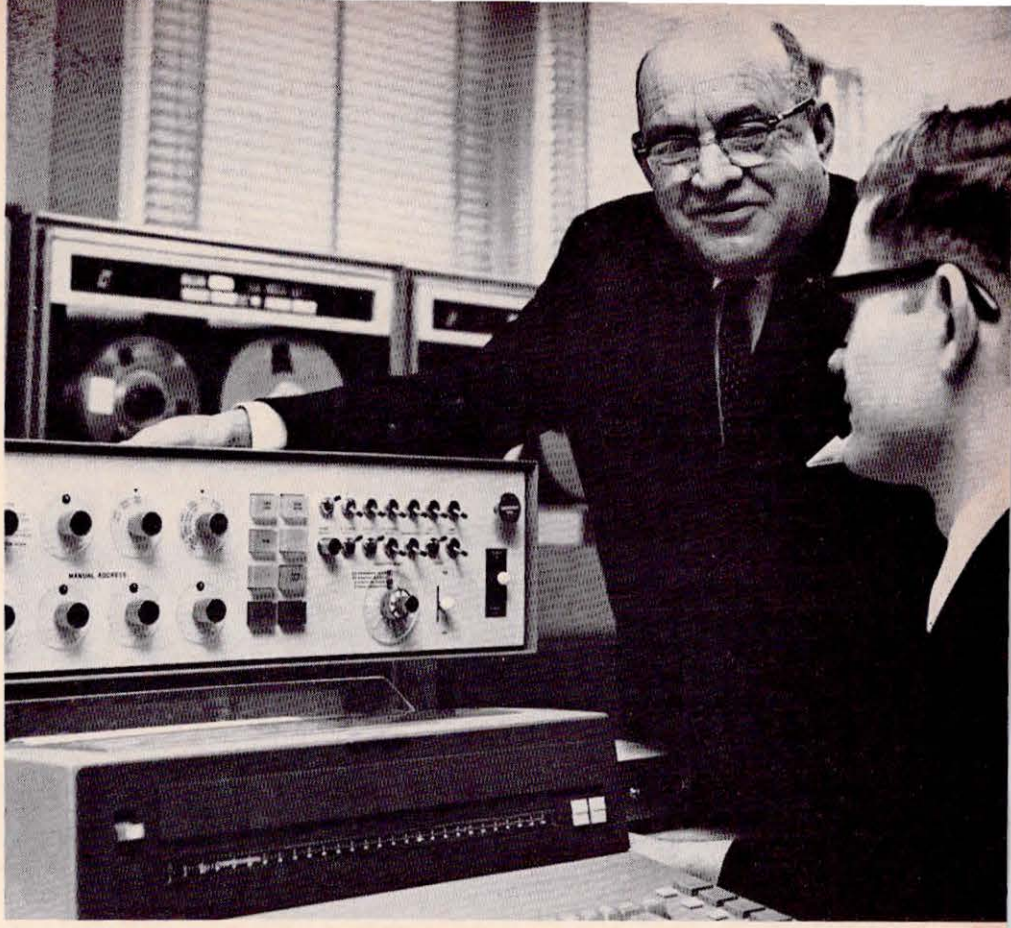
—Pulls from team tracks and private sidings.

Additionally the new system makes available:

—For L&N cars, the last reported location of a car regardless of the length of time that has elapsed since the car's last move.

—For all other cars, the interchange received record and last move.

L&N traffic officers get a weekly printout of historical records from the computer. They are held for six months.



REAL-TIME DATA SYSTEM on L&N is product of "beady-eyed professionals" who J. Harmon, director of data processing, says are not sidetracked from their primary assignment of "constructing a sound data foundation and communication system."

LIBRARY OF 700 PROGRAMS for directing computer operations is checked for a specific magnetic tape by Marlene Brumleve, compugrammer.

While L&N's break-through toward real-time information for its shippers is a sizeable achievement in itself, the meaning of the overlapping and interconnected networks of IBM 1050s and Telex machines goes much deeper. They outline the shape of L&N's future operations. The two networks

were carefully planned and built to be the foundations for the kind of super-efficient railroad L&N aims to be in a few years.

• **First big step.** The move to real-time car tracing represents the first major hurdle cleared by L&N's computer specialists in the road's ambitious five-year plan to effect computerized control of their operations. The five-year plan calls for the road to have on-line data in large areas of operation by 1967 — and to be totally operating with an on-line system by 1969.

The five-year plan went into effect Jan. 1, 1964. "And we're right on schedule," notes Harmon, "or even ahead of schedule, even though we've had to refigure our original timetable because of the announcement of a new generation of computer equipment by our supplier. We were able to incorporate the new equipment's increased capability very nicely into our planing and, when we get it installed next year, it will tend to speed up our overall progress somewhat."

• **Progress in widening rings.** Immediate ramifications of L&N's giant step forward in the race for an on-line management information system will probably begin showing up next month in the computer-originated reports and analyses that were formerly extracted from the slower, more intermittent body of data the computer had poured into it three times a day.

L&N's continuous flow of data from yards and terminals into its computer center at Louisville "as it happens" is going to perceptibly sharpen and strengthen a set of reports which some experts say are already the best in the industry—the reports aimed at exactly defining L&N's equipment performance, equipment utilization, equipment profitability and equipment control.

With train consist and interchange information now being drawn off the disc storage unit hourly, L&N will have an almost continuous view of cars overdue for loading, cars overdue to change status and cars arriving at home pool points. Forecasting availability of cars for loading promises to become something better than an educated guess very soon on L&N. "With this kind of picture at our fingertips," notes Harmon, "we can get this data to our traffic officers in time to make forecasting a pretty exact science."

This kind of current information also flags L&N personnel's attention to equipment not being returned to L&N as scheduled and provides the data needed so that equipment can be promptly traced through connecting carriers.

• **Management control.** L&N's operating and traffic officers keep a finger on the performance of L&N's carfleet (among the newest in the industry) through two important reports periodically abstracted from the data stored in the Louisville computer.

Semi-monthy a "pool and car performance" summary is made that guides L&N officers' attention to situations requiring action—pools with cars reported as standing too much of the time and pools with cars in short supply.

Monthly, an equipment survey of specialized cars is abstracted that shows how L&N's expensive rolling stock is doing—by car series. This report, which covered 2,500 cars until now, will shortly be expanded to bring in an additional 3,500 specialized cars, which will just about cover all of L&N's fleet of specialized equipment under a computer umbrella.

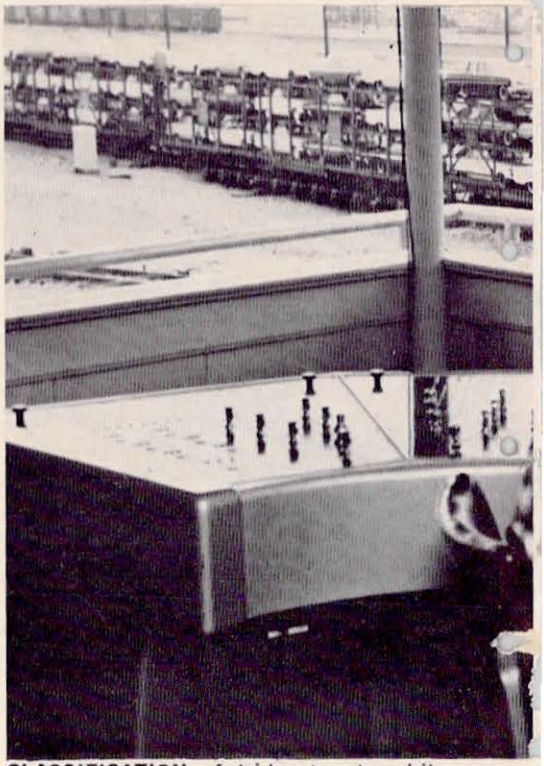
This monthly report of specialized car utilization provides detailed data on car series, number of cars per series, kind of cars, total revenue trips for the series, average trips per car in the series, loaded days, empty days, trip days, idle days, other days (shop, wreck, etc.) and then summarizes the information by class, kind and service. This data is used to exert control of its fleet of specialized equipment by L&N. "Present experience," says Harmon, "indicates that such control as we have used on the specialized cars we kept track of on the computer, resulted in as high as a 50% increase in utilization. And that's like adding more specialized cars to L&N's fleet."

• **How about other reports?** L&N is going slow with additional work on its computer. Says the road's Lisle W. Adkins, vice president—accounting and taxation, "We have had to conserve our ability to overcome problems by staying away from some areas where computers are being successfully used on other roads. Our first concern was to achieve a basic, reliable foundation of current data. And it is all-too-easy to get tangled up in low-priority work—to the point where you delay basic work on your information-gathering network.

"Without well-nigh perfect data flowing constantly into the computer as things happen out on the railroad, you can't even begin to move toward the economies that become possible with operations on the scale that railroads achieve. When we get a firm foundation of data—as we think we'll have with our network of 1050s—when they are completely operational, we can tackle an ever-widening ring of important chores. We intend to concentrate our attention on areas where the dollars are.

"This is expensive activity and we just can't take on more jobs that fall into the low medium priority class. The computer may someday make us realize, in a practical way, that being in the railroad business is not the same

TRAINING of personnel proceeds steadily, so introduction of new units, such as 1050 at Louisville yard, is no problem.



CLASSIFICATION of tri-level automobile cars

thing as being in the business of running trains and maintaining tracks. We're in the railroad business to make money—and computers are forcing us to become more logical with our business activities and decisions."

● **Next big hurdle?** L&N's next step in its five-year planned race for real-time operation is already taking shape in the minds of the dozen-or-so systems development men who have been working for more than a year to develop a set of instructions to L&N's computer that will enable the machine to scan the day's activity and come up with a dollar figure for the day's work.

"Our project," says Harmon, "is to work up a reliable profit and loss statement. We are now shooting for a weekly statement. Once we've developed that, we'll work it down to a daily report."

Main problem in the area, says Art McKechnie, staff assistant, is in handling interline accounting of the revenue divisions that can be claimed for L&N's account. McKechnie and other L&N accounting and data processing specialists think the problem is one that lends itself to the statistical sampling techniques that have been developed in recent years. Notes Harmon, "We're getting closer by the day. We've got a workable cost system in operation that involves the weighing of more than 2,500 different cost factors in L&N's day-by-day operations. Our men have been working for more than a year to find out how we should manipulate the data our network of 1050s will be capable of pouring into the machine from now on."

● **Programmed growth.** L&N's formal five-year plan presently has close to 40 programmers and systems personnel (L&N's job titles are "systegrammers and compugrammers") at work forming the real-time system ahead for L&N—and also for doing the routine work already on the machine. A force of 73 machine operators, control clerks and keypunch operators backs them up. Harmon has three staff assistants and six conventional supervisors directing the work of the 125-or-so employees.

So far, L&N has produced about 700 programs though, as Harmon points out, "We've written at least 1,000 programs that have been obsoleted."

Another important aspect of L&N's programmed progress toward real-time operation by 1969 in full-swing now is the training of yard and terminal personnel in the use of the IBM 1050s. This versatile machine (it can transmit and receive from cards, perforated tape and is a combination typewriter, keypunch, tape machine and inquiry terminal) is being operated by men and women selected months ago for such work by an L&N survey of personnel. All interested employees were given aptitude tests and those scoring highest were given the opportunity to take 40 hours of instruction in a training car (a converted L&N passenger car christened the L&N 1050 training car) that travels the system ahead of the 1050 installations.

at DeCoursey Yard uses tape prepared in advance with data sent by originating point.

● **Original study group.** The L&N study group whose recommendations resulted in the five-year plan for achieving real-time operation consisted, in Harmon's phrase, "of some high-powered traffic, operating, signal and communications men—as well as data processing and systems people. Our five-year approach was divided into 6-month segments. We systematically draw on talent as we need it. Our operating department has had six or seven men assigned to our project for real-time operation—and without them we'd have been in a helluva shape."

Similarly, notes Harmon, L&N's communications force took care of the necessity for having tool-quality transmission lines for the 1050 network. L&N presently sends about 85% of the computer's imput over its own lines and leases lines for about 15%.

● **For the near future.** As L&N's data processing department works toward the fourth six-month period on the road's five-year plan, one of the most pressing needs being felt is for experienced and talented manpower to help implement the expanding program. Vice President Adkins, citing a flash benefit from the road's computer late in 1963, when the data processing department produced an equipment depreciation study in six weeks that normally would have taken months to produce, notes that L&N systems men have already started planning for systems handling of billings and collections, yard and division efficiency evaluation, budget control and cost accounting and other programs that will result in L&N becoming one of the most tightly controlled U.S. railroads.

● **Backup provided for.** One area that L&N—and other railroads—worry about is the increasing dependence the railroad will have on the computer. "We've provided for a backup to our final equipment configuration so that if our main computer cuts out, we'll be able to instantly cut in another computer to carry on," says Adkins.

"We are now, in fact, considering stand-by power equipment to take care of possible power failures. Something along the lines of a diesel-powered generator set. It is essential that we have such assurance."

But problems, Adkins points out, are overcome as they arise. "We're moving carefully—to avoid the need for going back and correcting faulty logic in our fundamental approach. With a sound foundation of data imput, there is no limit to the areas of work the computer can control.

"We feel that our network of 1050s —and our network of Telex machines —is going to give us that data foundation as soon—or sooner—than anybody in the industry." ■

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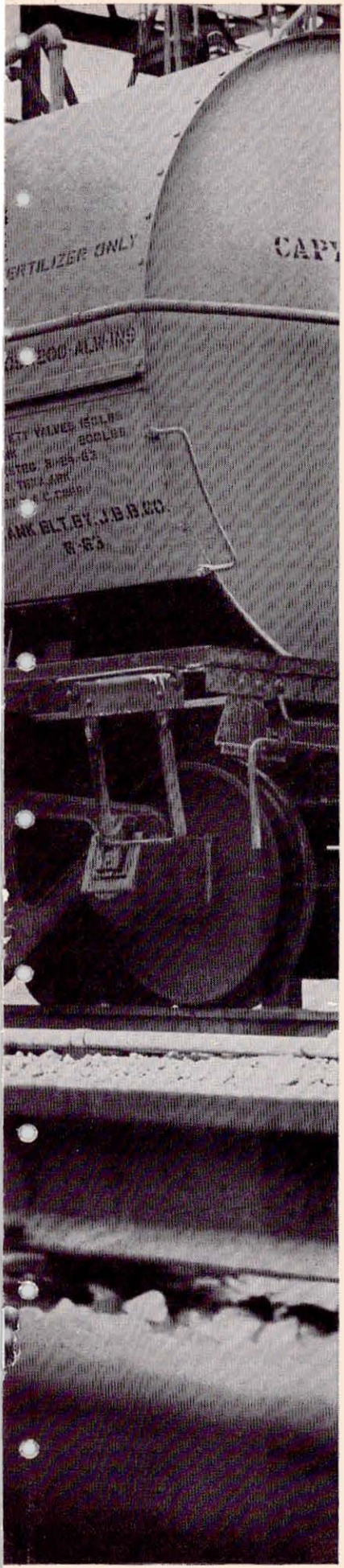

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Aluminum is not the only metal that can handle corrosives without corroding. But it is the one metal that combines this ability with some others that are most important in tank cars . . . high strength-to-weight ratio and lower cost, to name two.

The tank cars now in service for International Minerals and Chemical Corp., leased from North American Car Corp. and made with Reynolds Aluminum, illustrate these advantages. The aluminum tanks for these cars were fabricated by AMF Beaird, Inc. They carry sensitive, corrosive liquid nitrogen fertilizers in daily runs from the IMC's Nitrin Plant at Cordova, Illinois.

Cars of this kind resist corroding, and won't contaminate their cargoes. They do their job with a minimum of maintenance, and they'll do it for years.

In addition, however, these cars—because they are strong, lightweight aluminum—reduce deadweight. They will give their users greater payloads per car, and easier handling of the cars.

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Full instrumented tests have been completed with ASF laboratory equipment recording engineering data.

ACL tests 'Whopper Hopper'

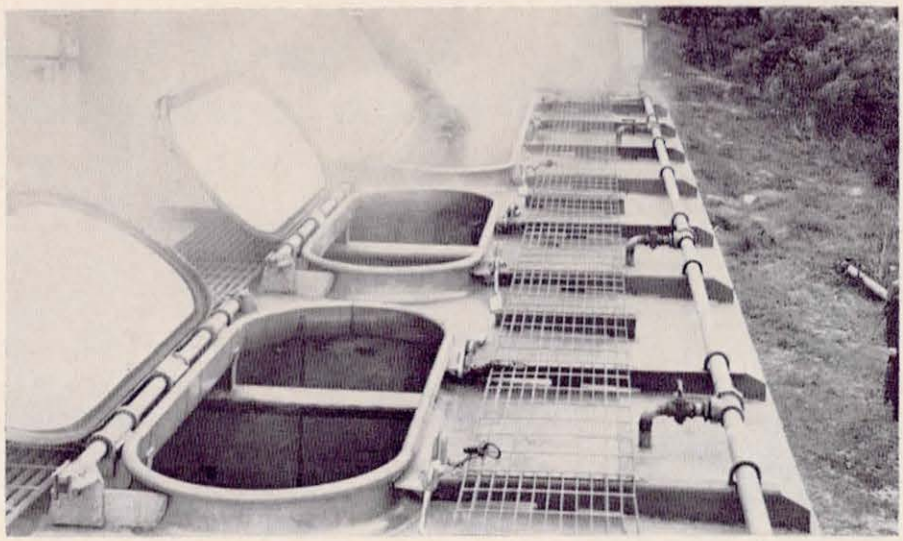
Big car's capabilities have been under engineering and operational studies. Instrumented tests have determined deflections, horizontal and vertical forces. Car shows good riding characteristics.

What has happened to the "Whopper Hopper"? The Atlantic Coast Line took delivery of the 135-ton, 5,006-cubic-foot car early in September, 1964 (RA, Sept. 14, 1964, p. 22) Built by Pullman-Standard, the car is unusual in several respects: high-capacity, first service application of American Steel Foundries three-axle freight-car truck, a superstructure of U.S. Steel's Tenelon stainless steel, and an automatic interior cleaning washout system.

● **Full-scale tests completed.** Since delivery last September, the big car has been exhibited and tested. It was part of an exhibit of specialized freight cars that ACL showed at 13 key traffic centers on its lines. Alterwards, full-scale tests under full instrumentation were completed, using ASF's laboratory cars in the study. Service tests started last December 11. They are being continued as the ACL program calls for a full appraisal of the car's performance with many different ladings.

Results of the instrumented tests are being analyzed and a report may be soon available. Men riding the car during these tests report that without load the car rode well at speeds up to 80 mph and with load at speeds up to 65 mph. Operation was considered satisfactory; it negotiated No. 8 turnouts without difficulty.

For the first service test, the Whopper Hopper was loaded with 105 tons of soybeans at Vienna, Ga., for shipment to Charleston, S.C. It was tested at various speeds during the run. Performance was excellent. At the destination it was unloaded within 30 minutes.



In service tests, car has carried 105 tons of soy beans, up to 128 tons of phosphate.

● **Pleased the shipper.** Subsequent tests have been in phosphate service between Bonnie, Fla. and Tampa, Fla. This is a short haul, but ACL wanted experience in loading the car to capacity. On these runs the loads ranged between 123 to 128 tons, about the maximum possible for lading of this density, without trimming. All runs were satisfactory. The shipper was pleased with the loading and unloading operations and the high capacity of the car.

Future runs will include a westbound loading with one commodity such as phosphate, and a return movement with another commodity, such as pulverized or fine coal. The built-in automatic water washout system for use when a change in lading is made has been tested and reported as doing "a good job." The interior dries quickly because there are no pockets in which water can collect. The stainless steel is not affected by the ladings and its smooth surface facilitates unloading of even the difficult phosphate ladings. ■

NYC aim: Softer rides for freight

The transportation environment railroads offer their customers can't be beat, NYC tests prove.

What are the forces which can be encountered during rail shipment of freight?

The question comes regularly from producers of consumer goods, such as household appliances and furniture, and from manufacturers of heavy industrial equipment, such as machine tools and electrical transformers. The question is basic to manufacturers' original designs and to the manufacturers' subsequent choice of packaging and shipping arrangements.

Railroads generally are much too defensive about the environment which they can now provide for freight, says J. J. Wright, director of technical research, New York Central. Five years ago it was another story. But recent freight equipment developments are making today's railroads fully competitive with all other transport modes in the matter of the ride that shipments can be given. And the NYC's Technical Research Department has exact data and tests to bear this out.

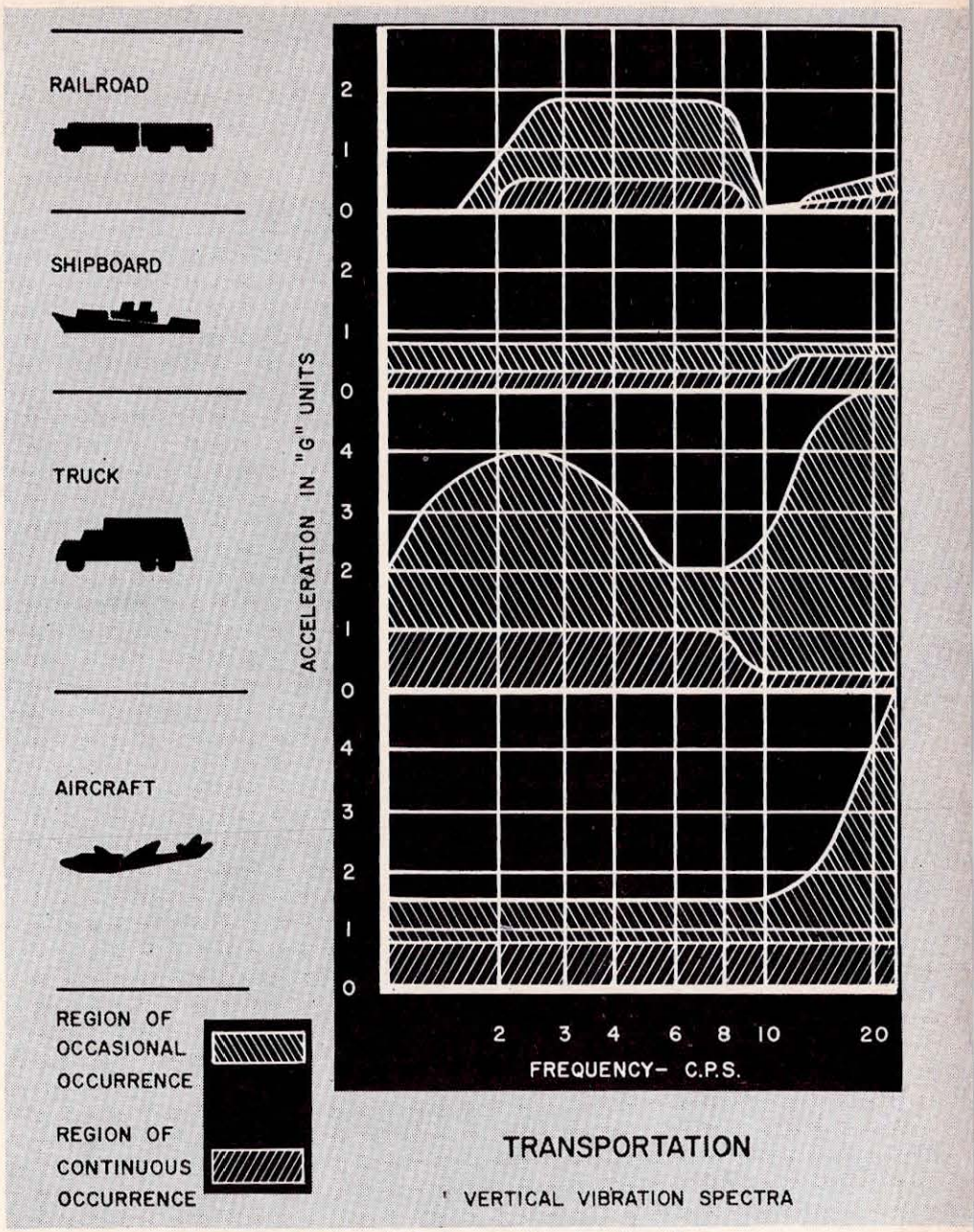
● **Controlled environment.** The environment in which rail-hauled freight moves can now be controlled more exactly than has ever before been possible. In effect, it can be controlled better than the environments provided by any of the railroads' competitors. Transportation environment—that aggregate of all external conditions and influences which affect freight during shipment—can, and does, involve many conditions. Longitudinal impact, however, inevitably receives the greatest attention when rail haulage is being considered.

The reason is simple. Longitudinal impacts have always been the principal source of lading damage. This has always had major competitive implications. One of the most pressing problems involved with rail movement of freight has been the cost of securing a lading in a car and then protecting it from impact. Temperature, humidity, pressure and vertical and lateral accelerations affect some types of freight. Longitudinal accelerations, though, can affect the shipment of practically all commodities. The highway carrier has an inherent advantage here because friction between the rubber tire and pavement limits maximum longitudinal forces to levels far below those which may occasionally be developed when the low-friction steel wheel and steel rails are involved. But the outlook need not be a negative one.

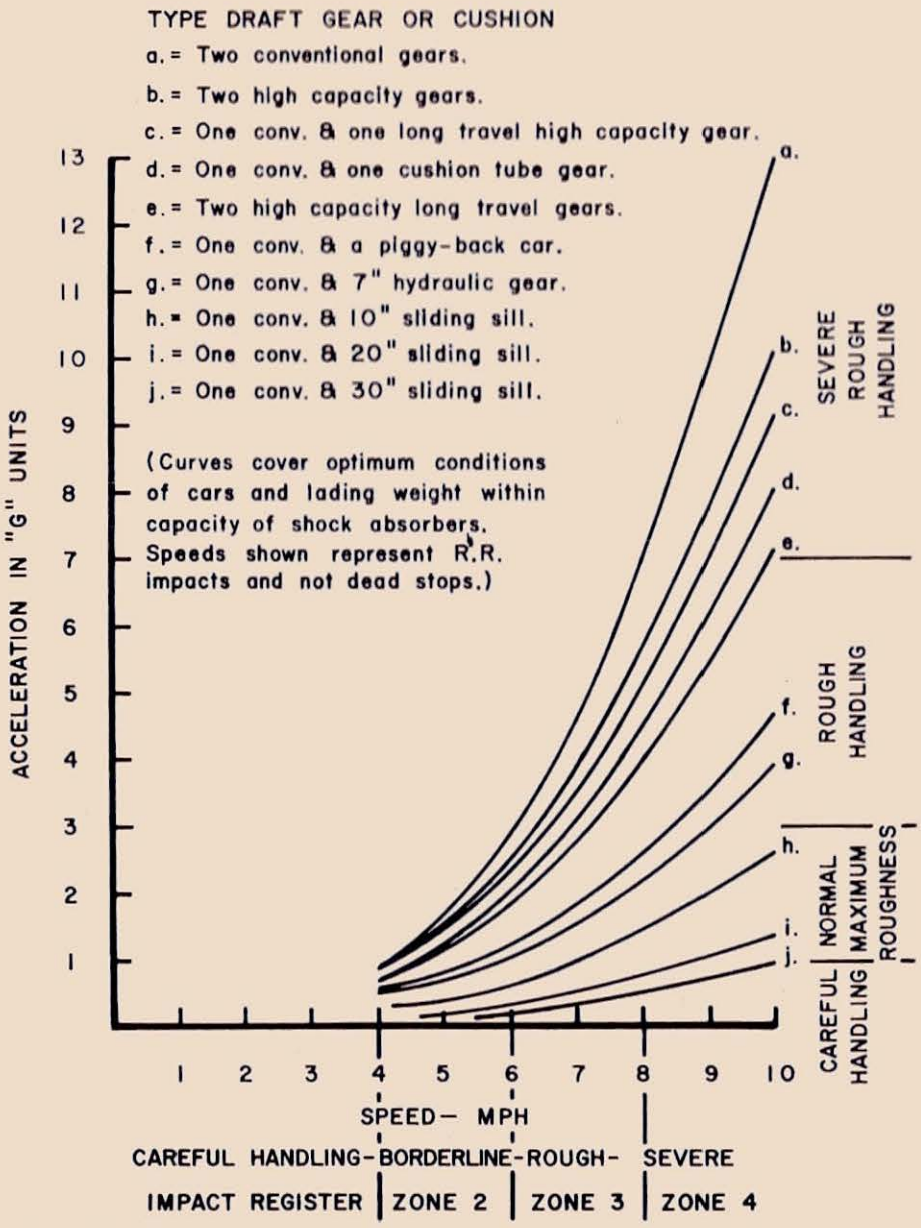
● **Tell the customer.** Hardware now available for cushioning impacts is rapidly being applied for handling the more critical loads. Just what this new hardware will do requires careful appraisal by railroads. This information must then be given to customers whose product designs and shipping arrangements can frequently be altered, enhancing the railroads' competitive position.

Several years ago the New York Central, realizing the vital role of such appraisal, determined to provide itself with instruments, recorders and computers that would enable it to know exactly just how the latest freight cars and components perform.

Traditional impact registers are dependable, rugged and capable of producing results which usually can be correlated with lading damage. They are not responsive, however, to high-frequency vibration and indicate only the maximum forces to which they



Railroads make good showing in vertical vibration
Vertical vibrations in cycles per second (cps) shows low G forces for rail transport. NYC provided data on railroad capabilities to another group which prepared this chart.


TYPE DRAFT GEAR OR CUSHION
a. = Two conventional gears.
b. = Two high capacity gears.
c. = One conv. & one long travel high capacity gear.
d. = One conv. & one cushion tube gear.
e. = Two high capacity long travel gears.
f. = One conv. & a piggy-back car.
g. = One conv. & 7" hydraulic gear.
h. = One conv. & 10" sliding sill.
i. = One conv. & 20" sliding sill.
j. = One conv. & 30" sliding sill.
(Curves cover optimum conditions of cars and lading weight within capacity of shock absorbers. Speeds shown represent R.R. impacts and not dead stops.)
ACCELERATION IN "G" UNITS
SEVERE ROUGH HANDLING
ROUGH HANDLING
NORMAL MAXIMUM ROUGHNESS
CAREFUL HANDLING
SPEED— MPH
CAREFUL HANDLING-BORDERLINE-ROUGH- SEVERE
IMPACT REGISTER | ZONE 2 | ZONE 3 | ZONE 4

Longitudinal forces can now be controlled

Forces at car floor vary, depending on type of shock absorber; high impact speeds can cause damage. NYC calculated curves, has since confirmed them with actual tests.

have been subjected. These maximums are not always the forces which do the most damage to lading. Most sophisticated instrumentation enables the NYC to tell its customers just what forces their products and packages will meet.

● **Technical research car.** To make more precise testing possible, the Technical Research Department was assigned an unused buffet-lounge-sleeper which was fitted with instrumentation to measure and record all manner of physical phenomena during over-the-road and stationary tests. Shock, vibration, stress, speed and many other factors can be determined accurately and continuously. Instruments include high-frequency accelerometers and strain gages, the outputs of which may be recorded on magnetic tape and paper graphs—57 channels of information simultaneously. An analog computer in the car can be used for making high-speed calculations from the data as it is accumulated.

The car has been fitted with an independent electric power system and heating plant so it may operate in any train and be spotted wherever testing dictates. All of the technical gear is mounted in the lounge end. Some of the bedrooms and the kitchen serve as living quarters for a test crew.

● **Customer-oriented studies.** Since the car went into service in February 1962, it has operated over 34,000 miles in the course of making forty separate tests. The car has operated practically full time on customer-oriented investigations. Much of the accumulated data is being utilized as potent sales tools for NYC traffic men.

What has NYC research determined? "We should be accentuating the positive," says Wright. "Freight salesmen have been concentrating on speed and on the volume- and weight-carrying capabilities of railroads. They are now in a position to sell environment—something which they have often skirted because it was an area where railroads formerly made such a poor showing."

● **Generate new revenues.** "We should be looking at today's specialized freight cars primarily as generators of new revenue, not just ways to obtain greater return from existing traffic though reduced damage claims," he continues. "For the first time in history, when we are able to give customers' freight a very high-quality ride, we are simply not doing an adequate job of telling our story."

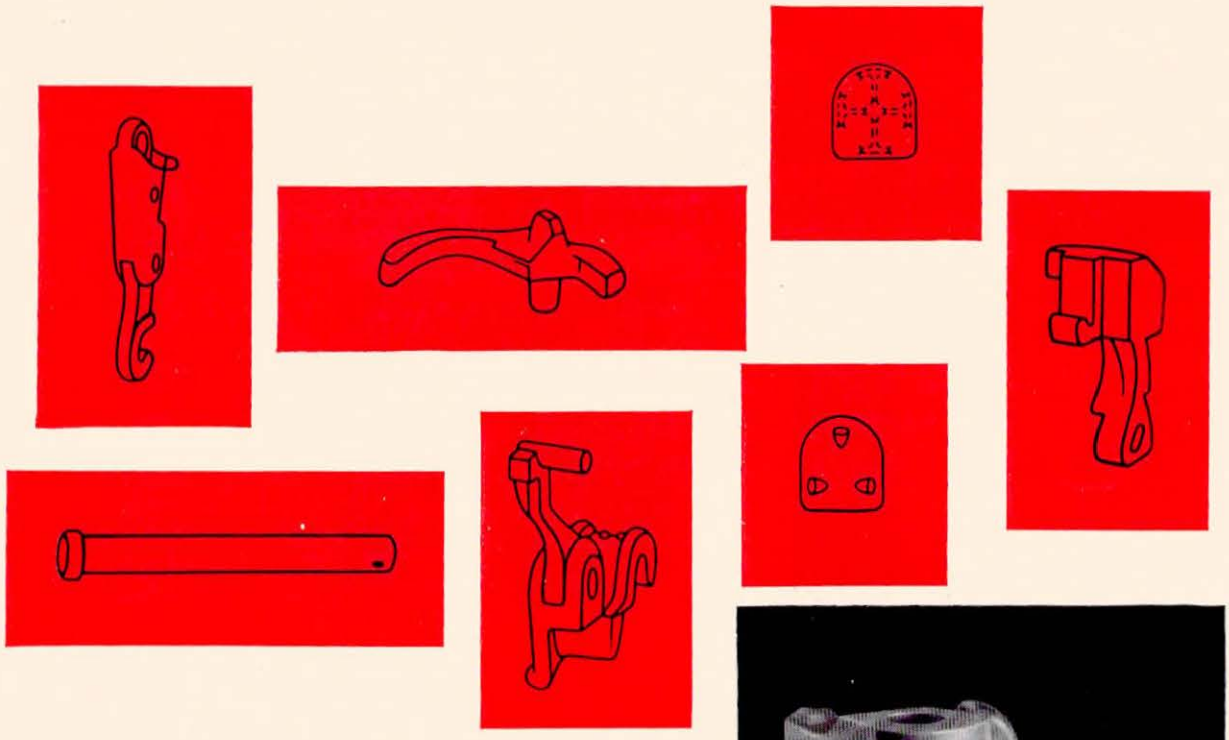
Customers can be told—and this backed with extensive data—that rail haulage has definite advantages over highway carriers when problems of vertical and lateral forces are involved. Air carriers subject their loads to high-frequency vibrations which are not readily overcome. And, says Wright, longitudinal impacts need no longer be a problem for railroads.

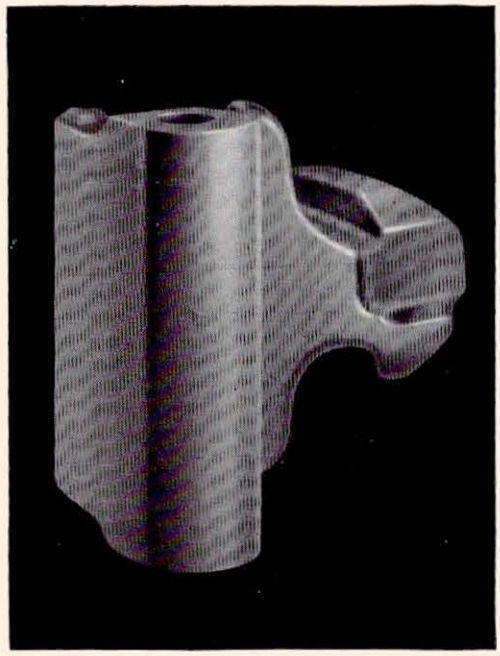
"Railroads have always had a safety and reliability unmatched by other transport modes, and that was confirmed by a study sponsored by the Atomic Energy Commission," explains Wright. "Why do you think that the Air Force and Navy choose to transport their most critical loads by rail? Today, the safest and most reliable transport mode can handle traffic gently, something which could not always be done."

● **Space-age freight.** Actually, long before NYC placed its technical research car in service the Technical Research Department was working on ways to accentuate the positive in rail transportation. Much of the early activity was directed at obtaining rail hauls of "space age" freight—missile components, nuclear reactor control packages, electronics gear, and similar exotic units.

Not only are freight rates high on such shipments, but successful handling of these glamor items is regarded as a method for bringing rail haulage to shippers' attention, simultaneously giving them new confidence in railroad capabilities. An air flotation system developed in 1958 for transporting assembled missiles has since served as the basis for successful transportation of other delicate assemblies.

Protection from shock and vibration is achieved by using pneumatic dunnage units, entirely within the car. In addition to protecting lading against longi-





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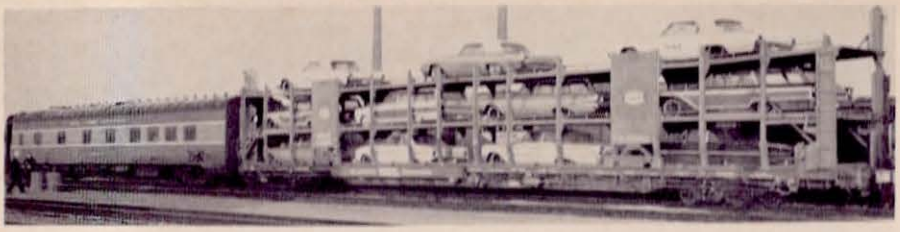
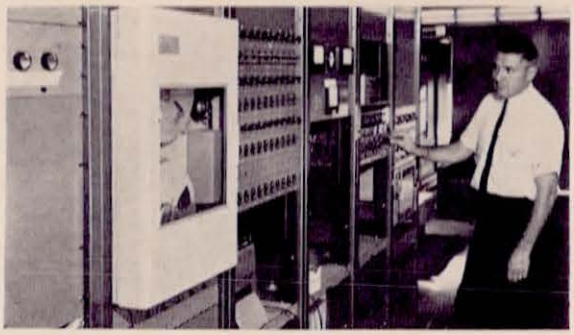


Rolling laboratory gathers test data



Technical research car is fitted to record 57 simultaneous channels of information (right). A recent road test (above) found research car coupled to a loaded auto rack car. Tie-down problems continue in moving new automobiles.

tudinal shocks, air flotation damps vertical forces and reduces vibration frequency.

• **Nuclear reactor control.** A 20-year-old gondola car, fitted with the NYC's air-flotation system and other special gear, has become the standard method for shipping one type of nuclear submarine reactor control head. Here was a unit whose weight was easily within railroad capabilities for moving heavy loads—something no competing mode could readily match.

Prior to NYC's development of the special car, it was necessary to ship separately the control rods and positioning devices which make up this device, assembling them at destination under conditions differing from those in the manufacturer's plant. Now that the car is used, each control head is assembled at the plant, ready for installation when it reaches its destination. Manufacturer's precision settings are undisturbed by the rail haul of several hundred miles. And a new source of regular traffic has been developed.

• **Moving Polaris motors.** Southern Pacific and NYC have worked together in developing a method for making regular transcontinental movements for the Navy of the Polaris missile motor. The $3.5-million unit was formerly flown by the Military Air Transport Service at $22,000 per trip. These units, bulky and sensitive to pressure and temperature variations as well as shock, are now handled piggyback in special trailers at a cost less than one-third that of the air haul. Again, added traffic for the railroads.

While many of the early NYC shock- and vibration-control studies involved space-age products, the bulk of investigations conducted since the technical research car went into service have been concerned with more conventional traffic. Sophisticated instrumentation on the car makes it possible for the NYC to tell customers just what impacts and vibrations their products must stand.

• **Customers don't know.** "We too often don't recognize our customers' needs; the customers don't know what railroads can do," says Director Wright. "But shippers are upgrading their technical skills in assessing transport; it certainly behooves transport agencies—including railroads—to upgrade their technical appraisal of their own capabilities.

"We are even going the 'second mile' as a distribution organization," he explains. "We have, in some cases, provided customers with such exact data on our capabilities, earning their complete confidence, that we are now called upon to assist in product design, insofar as it may be affected by transportation en route to customers."

• **High, wide and heavy.** The nation's two largest transformer manufacturers, both NYC customers, have cooperated closely in studies of shipping methods for the high, wide and heavy loads which are today's massive power transformers. In addition to indicating desirable changes in the tie-downs and snubbing arrangements for securing these transformers on cars, NYC research has shown that internal changes which do not alter electrical characteristics and have little effect on manufacturing costs, can do much to make transformers more vibration resistant. Some of these railroad recommendations have been incorporated in recent units.

A year ago NYC conducted impact and road tests for RCA Whirlpool, even though this shipper was experiencing no particular problems with box-car shipments of domestic appliances from the plant at St. Joseph, Mich. Whirlpool uses a vibration and impact test machine to determine the adequacy of appliance packaging. Primary purpose of the NYC test was to obtain actual box-car shocks and vibrations which could be compared with input forces developed by the tester. A secondary purpose was appraisal of a new thin-wall carton.

• **Correlating lab tests.** It was found that the test machine adequately reproduced over-the-road vibration. It could not, however, simulate switching shocks without some testing procedure changes. Even though equivalent "G" forces could be reproduced, they were not sustained for long enough intervals to subject packaged appliances to the shocks they might encounter during switching. The new carton was found somewhat less effective than its predecessor. Gages within the washing machines failed to indicate any structural weaknesses or changes which would improve their ability to withstand transportation shocks and vibration.

Achieving and holding the NYC's present position as the leading transporter of new automobiles has also involved the road's technical research group. This is an operation which moved 915,000 new vehicles and grossed $24.8 million in 1964. But such burgeoning traffic has not been without its problems.

• **Auto transport problems.** Four years ago, soon after new auto movements on NYC bi-levels and tri-levels started, the road began to experience costly damage because of deficiencies in tie-downs. Carefully instrumented impact tests showed the advantage of new tie-down arrangements in preventing the bending of auto frames. They also showed the importance of providing new points on the vehicles for tie-down attachment.

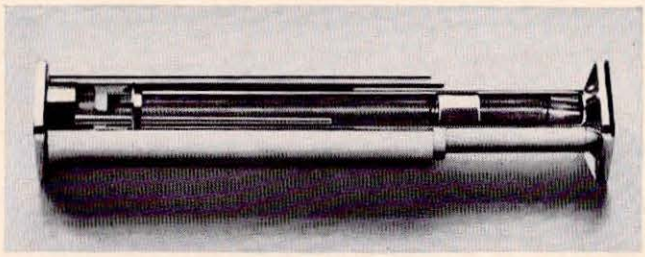
The research car has also been utilized for tests on other railroads. Recently, on the Missouri Pacific, it was involved in studies of dynamic forces in the plates of 38-inch wheels which are now being used under 125-ton cars that have gross rail loads of 315,000 pounds on four axles.

• **Lateral and vertical forces.** What have investigations proved to NYC research men? Lateral and vertical vibrations in railroad cars have almost no effect on properly packaged and restrained lading. Vertical shocks which result from longitudinal impacts—when lading literally rises from the car floor—are more serious. During severe impacts, cars have been found to receive 4G vertical forces and lading has sustained verticals as high as 9G. The "as packed" condition of the car may also be disturbed.

Longitudinal shocks which result from slack action in trains normally are

(*Continued on page 67*)

Today 23 railroads are reducing damage claims with the ACF Freight-Saver™ Cushioning System



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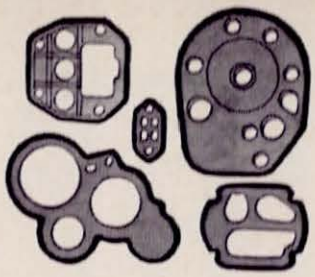
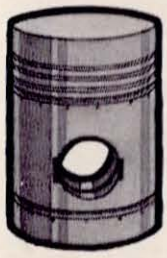
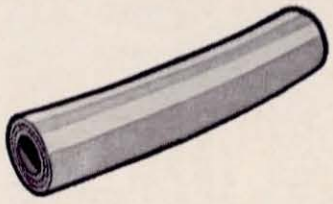


AIR BRAKE GASKETS—G-B Flextite gaskets provide a tighter seal, are oil resistant, more resilient, and pliable at low temperatures—thanks to special alloying of rubber compounds.

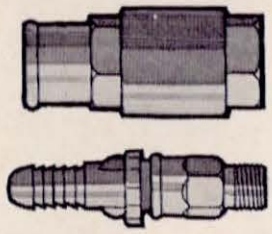
TRAIN-LINE INSULATION—For steam train-line piping and exposed water pipes beneath car floor. Ultralite glass fiber insulation, cemented to waterproofed heavy asbestos cloth, is 2 inches thick. Provides superior thermal efficiency.



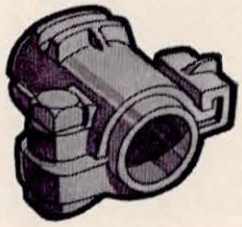
DIESEL LOCOMOTIVE PISTONS—Made of high alloy cast iron. For Alco engines #244 and #251.



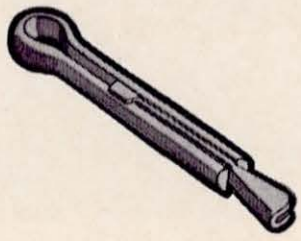
AIR TOOL HOSE—Red Atlas Brand—a fine quality hose with a national reputation. Built to exceed AAR specifications—distinctive red cover for easy identification. In bales or 50' lengths.



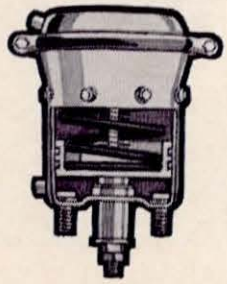
COUPLINGS—Lowery Hose Couplings are the simplest and safest method of attaching hose to tools. Swivel nut and rubber seal assure positive leak-proof connection that can't blow off.



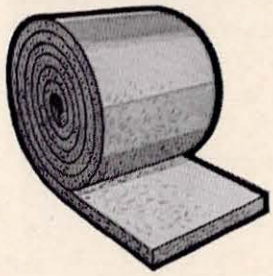
BRAKE PIPE CLAMPS—G-B Standard Bolt-type clamp helps relieve vibration and longitudinal movement of brake pipe. Serrated bearing area of clamp virtually eliminates wear and fracture at pipe hole.



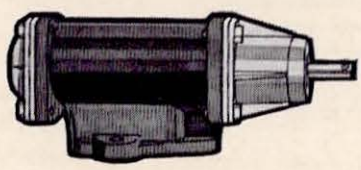
LOCKTITE COTTERS—More quickly and safely applied than ordinary cotters. Automatically spread to the proper pitch without fracturing metal. Fit tightly in standard size holes, preventing vibration and wear.



MAXIBRAKE — Surest, simplest, safest spring applied brake safety device for air-equipped truck, bus or trailer. An emergency brake when normal air goes out . . . a positive parking brake . . . an auxiliary brake in emergency stops.



BLANKET INSULATION—G-B Ultralite—lightweight fiber glass blanket insulation for thermal and/or acoustical treatment. Won't rot, mold, pick up odors, or disintegrate under vibration. Permanent as glass itself.



BRAKE CYLINDER RELEASE VALVE—Constantly measures air pressure so it can react correctly and instantaneously when activated. Exclusive new lockout feature prevents accidental tripping under conditions of light brake applications.

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Trailers loaded with glass products move smoothly over a grade crossing at Owens-Illinois New Jersey plant.

INSTALLING a rubber slab at a highway intersection with a double-track main line.

Rubber cushions for grade crossings

Glass-breakage losses for Owens-Illinois were high until jars could be moved smoothly.

Few railroad grade crossings are maintained in such a condition that trailers loaded with glassware can be pulled over them at regular speeds. But one glass manufacturer is not afraid to have this done over the special crossings it has installed.

At Bridgeton, in southern New Jersey, Owens-Illinois has a glass container plant whose rated tonnage of output is said to be greater than any other similar facility in the world. At peak periods, the plant's eight huge furnaces and 2,400 employees produce three million pieces of glass per day for various industries.

This plant is served by the Jersey Central which switches raw materials into it on a spur that branches out into seven stub tracks. Within the plant, a load of finished ware can hardly make a move without passing over one of four rail crossings, three of which are double-track lines. The fourth involves a single track. Loaded with hundreds of glass containers, trains made up of six to eight four-wheel trailers towed by 2½-ton tractors move from the selecting areas to the warehouse and from warehouse to loading dock in a steady, around-the-clock stream.

● **Breakage losses are high.** Owens-Illinois says it was afflicted for years by dropped loads at these crossings. Tractor drivers had to slow almost to a stalling crawl when they reached the crossings. Even so, it was not unusual for half the load on an eight-trailer train to be dumped at the crossings. In addition, the company says that repairing front-end damage to trucks caused by ruts and holes was a big item.

● **Rubber slabs are adopted.** In 1956, Owens-Illinois decided to experiment with a rubber crossing manufactured by Goodyear Tire & Rubber Co. It tore out a 15-foot asphalt crossing and replaced it with rubber. The change is said to have been felt almost immediately. The tractor drivers reportedly drove their trains over the crossing as if there were no rails there,

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1. Quality. Sumitomo wheels and other rolling stock parts are unsurpassed for quality. Sumitomo guarantees it. Our's are the strictest quality controls in the industry.

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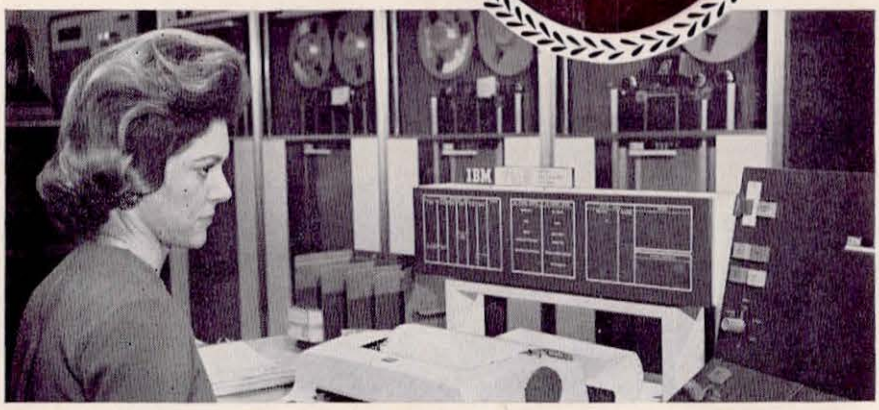
L&N pioneered in Data-Processing half-a-century ago

The year was 1915. Farsighted L&N saw the many advantages to its shippers in compiling and computing information accurately and rapidly. *Shown is L&N's first punch card machine.*



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The year is 1965, L&N continues as one of the nation's most progressive railroads. The latest electronic data processing techniques permit maximum utilization of our modern car fleet. L&N's Data Processing Center in Louisville reports on the daily movements of 35,000 cars over L&N's 5800 miles of main line. A modern communication system transmits these findings at your request, to assist in the planning of your production.

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without any spillage occurring. As a result of its experience with the experimental rubber crossing, Owens-Illinois decided in 1960 to replace all the problem crossings at Bridgeton with rubber. In conjunction with the crossing work, improved drainage was installed and new ties were inserted at 18-inch centers.

Owens-Illinois reports that there has been no truck damage or blown tires attributable to the crossings. Also, crossing maintenance is said to be negligible.

● **How crossings are made.** The rubber crossings are comprised of specially designed rubber slabs, 2½ inches thick, molded around a sheet of ¼ in. corrugated steel. The latter, sealed in to prevent rusting, is shaped to form a bridge-like beam for strength. The slabs rest on heavy treated furring placed on top of the crossties. Each slab is fastened down by 12-in. galvanized lag screws countersunk into the slabs and extending through the metal. Rubber washers and grommets are used to cap the lag screws in the countersunk holes.

The end of the slabs that go between the rails are constructed with double flanges along the bottom side. The slabs are 59 inches wide and 36 inches long. When they are sprung into place under the rail heads and against the rail webs, the flanges are said to form a watertight fit. The smaller rubber slabs placed outside the rails are 21 9/16 inches by 36 inches in size. They extend to a header or pavement at the ends of the ties.

The slabs, made of special wear- and skid-resistant rubber compounds, have a diamond-design wearing surface. Being rubber they do not short out signal systems and are said to be removable for use at other crossings. It is claimed they can be installed in track with curvature of as much as 23 deg.

● **Thumbnail history.** The first Goodyear rubber crossing was installed in 1954 on one of the main tracks of the Erie at Wilbeth Road intersection, Akron, Ohio (RA, Dec. 27, 1954, p. 32). Since then other roads and a number of industries have made installations. Three were installed in 1955, and 11 were in service by the end of 1956.

According to the manufacturer, a breakthrough began in 1963. In that year, it is said, rubber crossings were installed at an average rate of one every 10 days. In the following year the installation rate reportedly rose to one every six days. More than 200 of the crossings are now in service, says the manufacturer, 70% of them at industrial sites and the remainder at busy highway-railroad crossings. ■

Car 54, where are you?

The new KarTrak* automatic railroad car identification system by Sylvania can tell you with proven economy and reliability.

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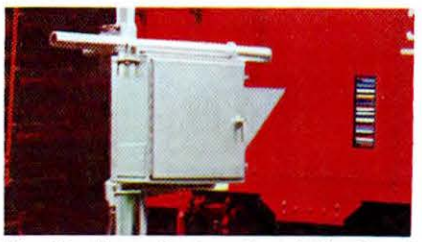
That's been proved by four years of testing on the Boston & Maine.

The System has two basic elements: a scanner-decoder and markings of Scotchlite® reflective sheeting. With these, it records car ownership, serial number, locomotive number, caboose number—and identifies unmarked cars.



The KarTrak System "reads" colored stripes... reports car number instantly!

With special provisions, it can even record tare weights and contents. Give you "instant inventory."

Of course, that's only what the KarTrak System does at first. Over the months and years, you'll find it does much more.

Improves customer service. Raises operating efficiency. Helps to increase your profits.

If you'd like that, write the KarTrak System, Sylvania Electric Products Inc., P.O. Box 268, Bedford, Mass. 07130. Or call 275-0300 (Area Code 617).

You'll never again have to wonder where any of your cars are.

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An outstanding feature of the R-500 is the friction clutch used in combination with heavy coil steel springs with a Butyl rubber inner core which assures high resistance to closure, resulting in less car maintenance, fewer bad order repairs, and longer service life.

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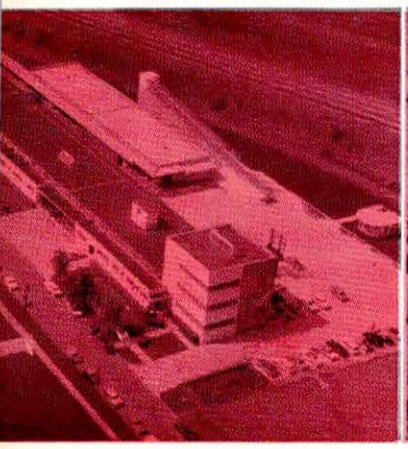

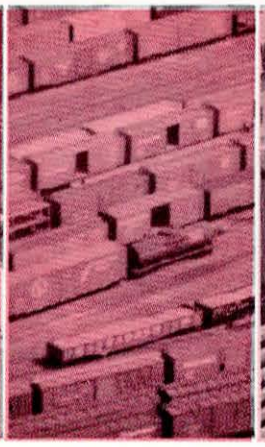

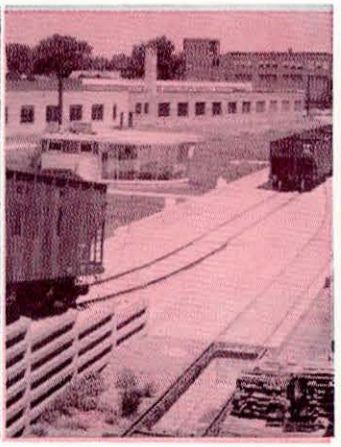

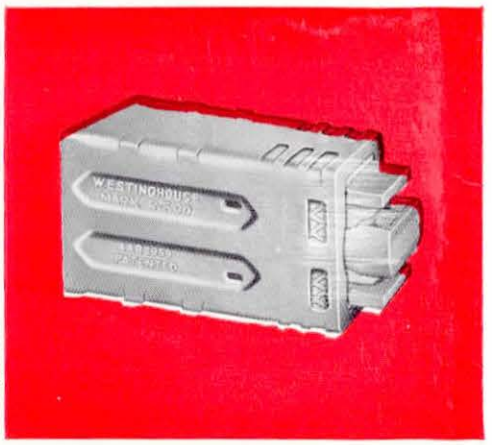

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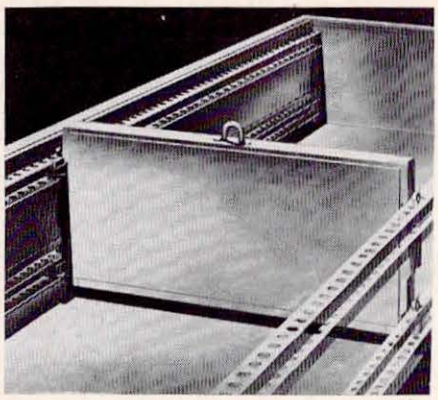
NEW PRODUCTS REPORT



Load Dividers (RA-1)

The Shunk-Yocar line of movable bulkheads for gondolas has been expanded to include the New PinLok series. The series is designed to fill the need for a quality-constructed, maintenance-free load divider. It includes both single and double locking rail models.

PinLok model B-PL-50, for moderate lading in 50- and 70-ton cars, features four locking rails per car—one rail at the top and one at the bottom of each car side. Model B-P1-100, for 70- and 100-ton cars, has eight locking rails per car—two at the top and two at the bottom on each side—to protect heavy shipments. Both models are said to be ideal for mixed loading.

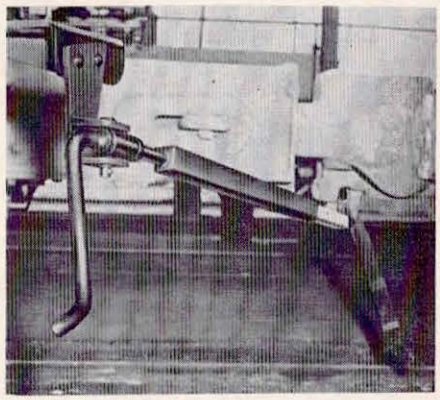
The new series features a simplified drop pin locking arrangement using individual locking pins. The pins assure positive locking of the bulkhead to the heavy-gauge angle locking rails on the car sides. Case hardened rollers assure dependability and ease of operation in positioning the bulkheads. Design of the pin locking arrangement compensates for any irregularities in car width. *Shunk Manufacturing Co.*

Throw-away Filter (RA-5)

The CX-3510 filter, a replacement for the sintered bronze cup-type final fuel filter, is said to eliminate much of the time consumed in cleaning and reinstalling the sintered bronze element. Specially processed pleated paper affords low micron filtration. The filtering media is embedded in a top flange of Plastisol. The pressure of the filter cover effects a leak-proof seal. The replacements are packaged 25 to the carton, each in a polyethylene bag. *Wix Corp.*

Automatic Power Plants (RA-2)

Thermoelectric (heat-into-electricity) generators are designed as an independent power supply for signaling, switching, and grade-crossing-guard applications in remote areas, and for cabooses. The automatic power plants produce electricity from the flameless combustion of propane gas. The no-flame, or catalytic, burner prevents "flame-outs" in high winds. Solid-state, hermetically sealed, thermo-electric modules do not deteriorate. The generators have no moving parts and operate in temperatures from —30 deg F to 1,250 deg F. Eight models, weighing from 22 to 125 lb, range in power from 6 to 50 watts, with higher-power units up to several hundred watts available on order. The units, utilizing LP gas, are said to generate electricity steadily and continuously 24 hr a day, completely unattended, at a fuel cost of 35 cents per kilowatt hour, based on a propane cost of 5 cents per pound. Output voltages for converters are 12 or 24 volts d-c. *General Instrument Corp.*



Uncoupling Device (RA-3)

The telescoping action of the square tubes of the Keystone uncoupling device is said to provide all flexibility needed for sill travel on cars equipped with cushioning systems and sliding sills. Because of the straight-line arrangement of component parts, torque is delivered from handle to pin lifter "as easy as a one-piece rod." Tubes are said to be sturdy enough to support the weight of a man. *Keystone Railway Equipment Co.*

Closed-Cell Neoprene (RA-4)

Soft, medium and firm grades of uniform, closed-cell neoprene materials are available for use as gaskets where bolt pressures are light as dust or moisture seals in sheet-metal joints; as cushioning for fragile parts; or to isolate vibrations where a soft resilient, shock-absorbent material is required. Sheets may be had in sizes up to 40 x 62 in., in thickness from 1/16 to 1¼ in., or die cut to specifications. *Armstrong Cork Co.*

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4/26/65

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SHIPPER TESTIMONY formed a good part of the record in the Senate Commerce Committee freight-car hearings. Here, three traffic men from the lumber industry have their say—left to right, Gus Hubbard, traffic manage, Simpson Timber Co., Tacoma; Ed Hilton, traffic manager, American Plywood Association, Tacoma; and Emmet J. Smith, general traffic manager, Edward Hines Lumber Co., Chicago.

Traffic men want more 'workhorse' cars

Shippers say they appreciate custom-made equipment, but the continuing need is for the general-purpose box car.

Everywhere you look, there's a freight-car shortage. And almost every conceivable type of car, someplace, is in short supply.

What's on the list of cars shippers want but can't always get? Well, 40-foot box, 50-foot box, plain box, special-service box, wide-door box, open-top hopper, gondola, covered hopper, flat. Aside from cabooses, about the only freight-train cars which shippers, in one area or another, don't fight for are refrigerator and tank cars. And leasing practices may have something to do with that.

● **Survey—and results.** Railway Age surveyed top officers of the 13 regional shippers advisory boards. Eleven general chairmen or presidents replied (two in the East didn't). What the replies show is simply this: Railroads have done a tremendous job in building up the fleet of special-service equipment—but the number of general-service cars continues to go down, down and down. And not a few shippers, apparently, still need and want the un-exotic type of equipment.

All this comment comes against a backdrop of controversy. Hearings have been held in Washington by the Senate Commerce Committee's freight-car shortage subcommittee on incentive per-diem bills. Field hearings were held last week in Denver, Omaha and Kansas City. Roads owning about 40% of the total fleet favor these bills, roads owning about 30% oppose—and shippers, while seeming generally to favor greater incentives for car ownership, aren't unanimously convinced that a per-diem arrangement like the present multi-level scale is the answer.

It's to be expected that the largest outcry on car shortages should come from shippers in the Midwest and westward from there. But this isn't an accurate generality either. Shippers in the East are also complaining—and, while reaction in the West credits railroads for what they have done on equipment supply, some reaction from the East is of a chastising nature.

● **What's it mean?** All this, to some degree, could seem unbelievable—what with the sums railroads have spent last year and in 1965 on new equipment. But the reaction is there—and it would seem to indicate that railroads and carbuilders alike might well devote more attention (and dollars) to fleet needs in the types of equipment known as "standard."

Taking the situation from left to right (as maps might), here is the situation pointed up by the Railway Age survey:

—In the West, the story is largely one of praise for what railroads have done and wishes that they could have done more. Example: J. R. Copeland, traffic manager of Holly Sugar Corp. and general chairman of the Central Western board, says most of the roads in his board's area "are building cars up to the maximum capacity of their own shops and are going to outside carbuilders. The railroads are doing about all they can reasonably be expected to do as far as obtaining new equipment is concerned." Yet, he notes, even so, "some of our western railroads have indicated that they are in more trouble than they were last autumn." In Central Western territory, Class A box and covered hoppers are short—an "unusual" condition for this time of year. Farther west, on the Pacific Coast, spot shortages of high-class and higher-capacity box cars, special-services box cars, covered hoppers, gondolas and flats are reported—but, at this point, nothing could be regarded as critical.

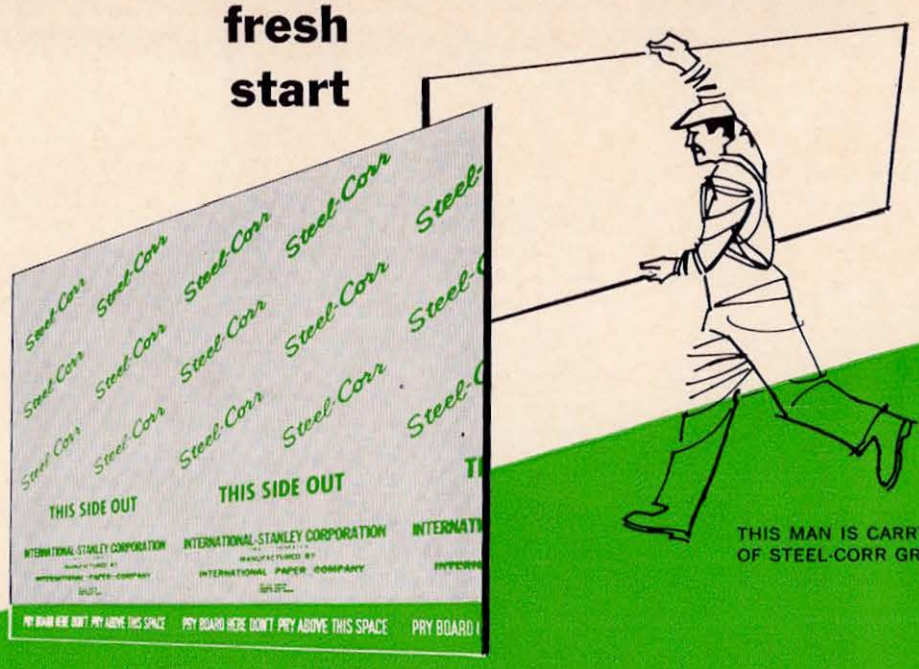
—Up in Pacific Northwest board territory, President D. J. Osbjornson, traffic manager of Lamb-Weston, Inc., indicates that a critical shortage has been experienced, "with no apparent relief in sight." Normally, he says, car shortage "is most severe in the fall months, but [it] has been with us for all of 1965." Plain box cars, 40- and 50-foot, wide- and double-door, have been most in demand—but spot shortages have come in damage-prevention-equipped box cars. And shortage reports have come from the lumber, grain, plywood and aluminum industries. In the Northwest board area, General Chairman W. L. Kennedy, western traffic manager of The Anaconda Co., says "we have been short of all classes of cars so far and anticipate shortages in the months ahead." High-grade box cars for grain loadings are in critical supply.

—In the South, shortages also appear to be general. Southeast board chairman George E. Hardtla, division traffic manager, Masonite, Corp., says wide- and double-door box cars are scarce. John R. Standley, general chairman of the Southwest board and regional traffic manager, Sears, Roebuck, notes that "at times, 40- and 50-foot box, gondola and open-top hopper cars have been critically short. So far this year, the only good supply has been flat-car equipment." Says Standley: "Many shippers in the Southwest have had car shortages this year. In the months ahead, we expect a tight car supply and spot shortages as we are approaching our peak loading."

—Almost the same comment comes from Victor H. French, of P. R. Mallory & Co., Inc., general chairman of the Ohio Valley board: "There has been a shortage of equipment during 1965, and further shortages are anticipated. Types that are most critical are all sizes of gondolas and 50-foot box cars." Elsewhere in the Midwest, there's an "amen" from N. R. Warmack, manager of marketing, Standard Pipeprotection Inc., and general chairman of the Trans-Missouri-Kansas board. Warmack cites shortages of plain box cars, gondolas and open-box hoppers: "There have been acute shortages in the TMK area thus far in 1965, and we expect this situation will

(*Continued on page 64*)

a fresh start



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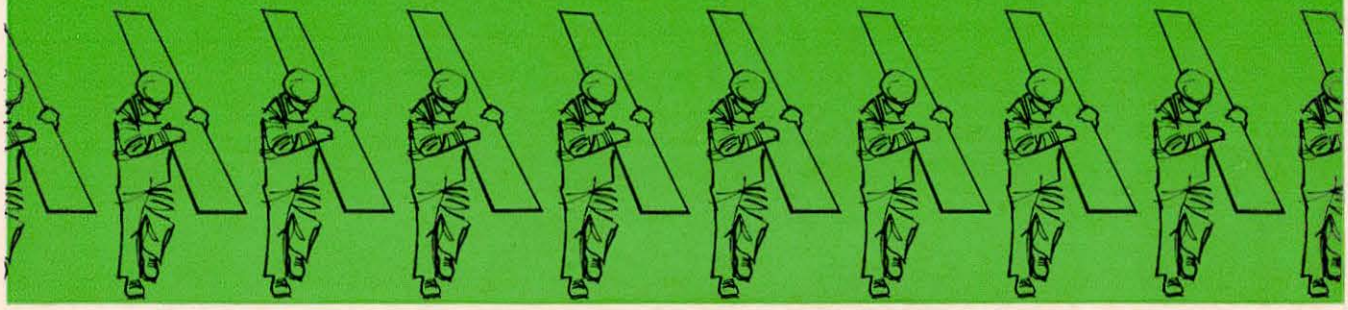

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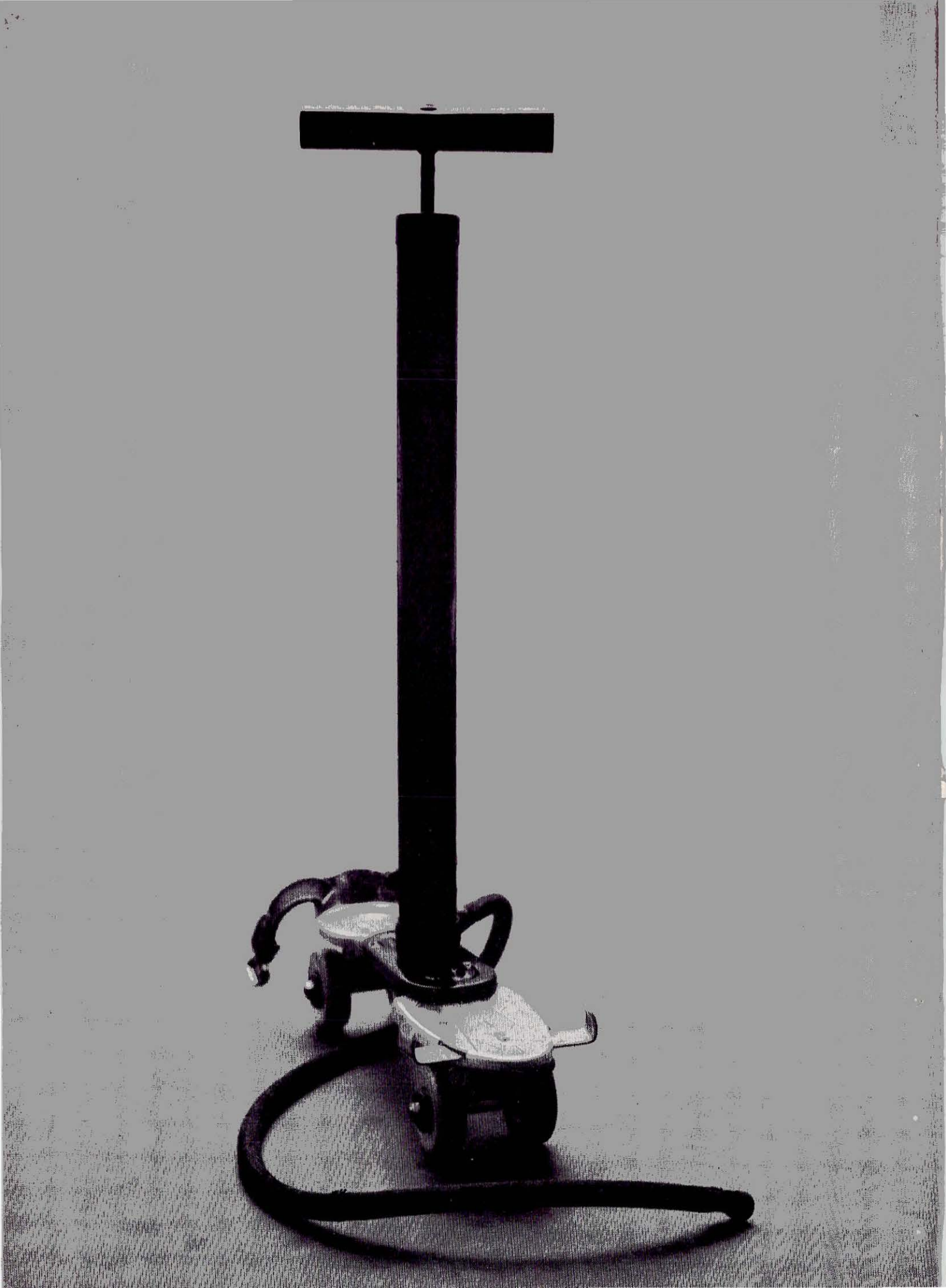

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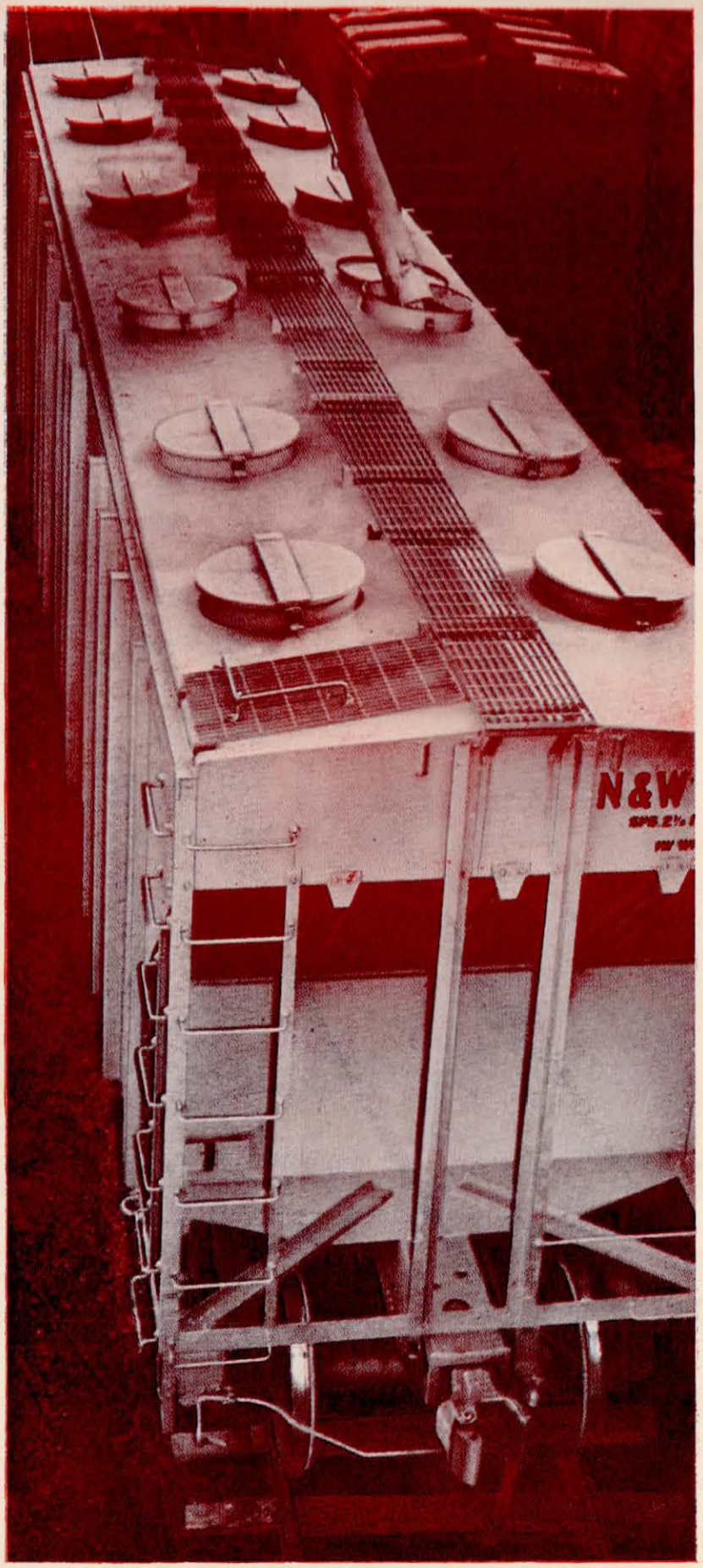

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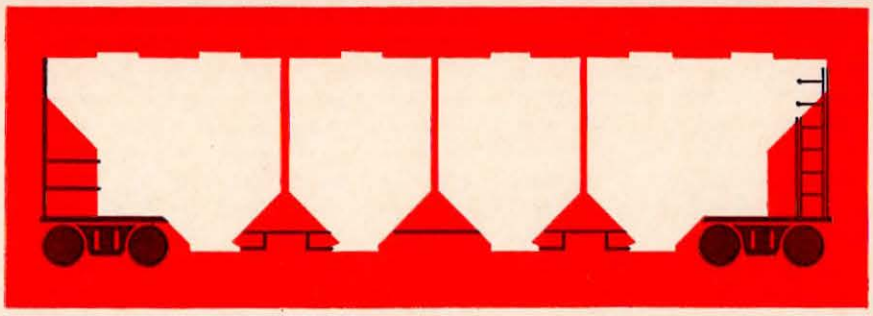
Special equipment like this simplifies shipping. Speeds loading and unloading. Saves labor and cost in loading and unloading, too. All of which adds up to savings for shippers.

The N&W has special equipment for shipments of almost any commodity. That's why it will pay you to talk your shipping problems over with us. Phone or write Norfolk and Western Railway Roanoke, Va.

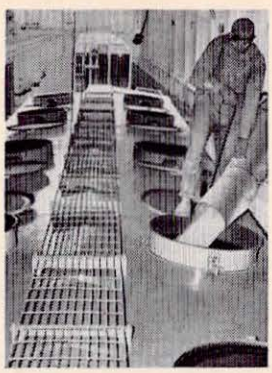


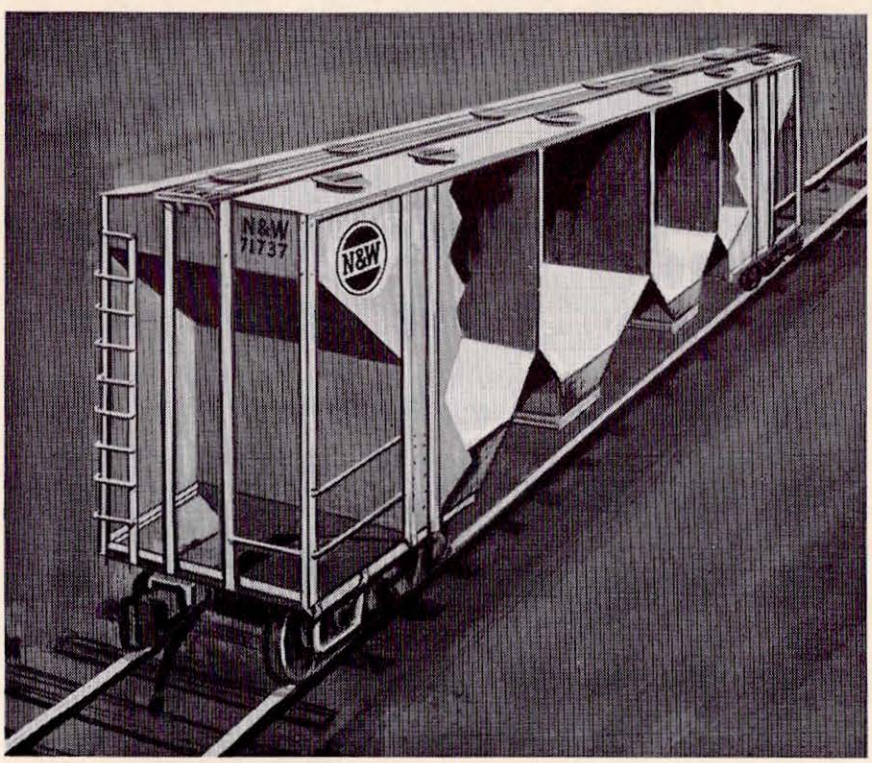
1 Four large center discharge hoppers of the N&W 100-ton covered hopper make unloading exceedingly fast. Hopper doors can be opened from one or both sides of car. A vibrator bracket is located on the side of each hopper outlet.

2 Four separate compartments permit greater shipping flexibility.

3 Twelve 30" diameter loading hatches permit fast loading.

4 These cars are among the largest covered hoppers yet built and were constructed specifically to meet N&W specifications. They are of all-steel construction and equipped with roller bearings. Their capacity permits them to handle a larger volume of light density commodities. Extreme width of car is 10' 7¼". Extreme height is 14' 11". Length over strikers is 55' 4½".

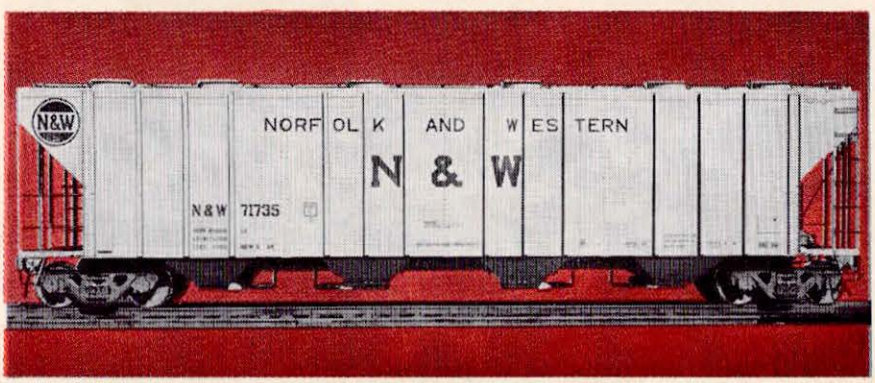




Superior rail service is also an important factor in plant site selection. For help in finding the right site, call H. P. Cotton, Assistant Vice President, Norfolk and Western Railway, Roanoke, Va.

N&W

NORFOLK and WESTERN RAILWAY



PLAIN CARS WANTED

(*Continued from page 58*)

continue." And in the heartland of the U.S., there's A. N. Moore, director of traffic, Interlake Steel Corp., and president of the Mid-West Board. He reports shortages during first-quarter 1965 in plain box, open-top and covered gondola and plain flat cars—and "we anticipate continued shortages of plain box, open-top gondola and plain flat cars during the second quarter."

—While western railroads are the most vocal in calling attention to shortages, eastern shippers don't fall much behind. Frank J. Bacher, general transportation manager, The Arrow Co., and president of the Atlantic States board, indicates that "we have had a shortage of equipment so far in 1965 and we anticipate that we will continue to have shortages for the balance of the year. We are especially short on 50-foot box cars, high-grade box cars and both long and short gondolas." A. M. Bronnele, director of purchases and traffic, Valley Mould and Iron Corp., and general chairman of the Allegheny board, is both more general and more specific. At the most recent meeting of the board, he says, "it was the consensus that all types of equipment were in tight or short supply. Specifically, gondolas, both regular and specially equipped, were in short supply. For many years, the depletion of the gondola fleet has been consistently called to the attention of the railroads. In spite of these repeated warnings, the number of these cars taken out of service has far exceeded the number of new gondola cars placed in service."

• **Those spot checks.** Generally, the shipper-board officers emphasize that the opinions are their own and not those of their boards. But advisory-board chairmen have a tendency to know what's going on in their areas —and some indicated they had made their own spot checks (as did one, whose use of rail service is limited to piggyback).

Almost without exception, these top traffic men praised railroads for what they've done to beef up equipment expenditures in the past two or three years. But the point that kept coming through was "why not more un-special cars?" One answer, of course, is that one high-capacity covered-hopper car in grain service can do the work of two 40-foot box cars. But the shipper comment regarding open-top hoppers, wide-door box cars and gondolas would seem to indicate that railroads are going whole-hog when there's still a market for general equipment.

In line with this are the shipper-board officers' comments on the effect of the graduated per-diem scale. Some say it's helped. Others say it's encouraged the building only of high-priced cars.

• **On use of equipment:** Shipper-board officers agree that better utilization of equipment may be the key to a better car supply. But they don't agree on how much of the blame for poor utilization falls on the railroad and how much on the shipper or receiver.

Some agree that (changed demurrage schedules or not) the customers have a share of the blame for poor utilization. Others indicate that railroads, if they're smart, can control such shipper gimmicks as ordering more cars that are needed (as one chairman says, "you can only fool anybody so long"). And a few contend that if customers were going to be penalized for slow loading or unloading, then railroads should be penalized, somehow, when pulls or spots are delayed.

• **What's it all mean?** What the whole series of shipper comments means is that (1) there have been serious car shortages, and there will be more this year, (2) railroads have perhaps gone too far to the custom-built, and (3) railroads and carbuilders alike might well think again of the plain instead of the fancy, for a change. ■

PROGRESS REPORT

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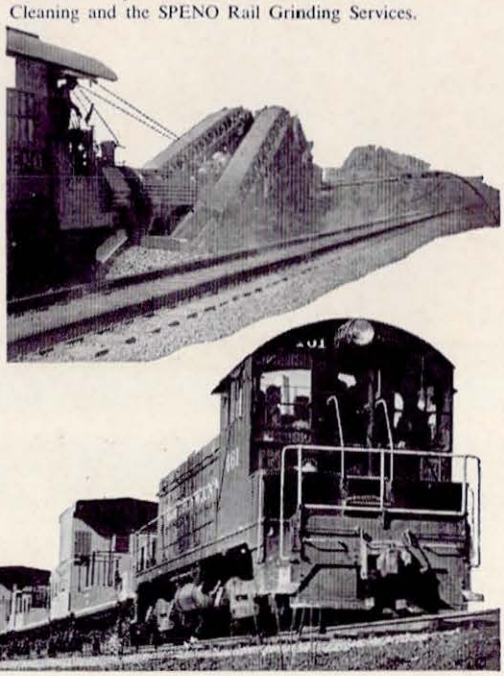
Here are the up-to-date facts on the SPENO Ballast Cleaning and the SPENO Rail Grinding Services.



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(Product Reference 66A)

(Product Reference 66B)

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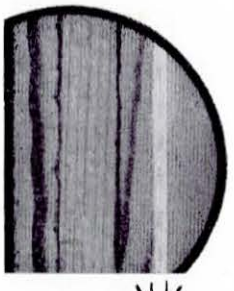

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NYC's IMPACT TESTS

(*Continued from page 48*)

not serious in properly loaded cars. Longitudinal shocks resulting from car switching in flat and hump yards are the most serious source of lading and car damage. As NYC engineers explain it: The energy contained in moving equipment is proportional to its mass and the square of its speeds; this energy must all be accounted for when impact occurs. Some is absorbed in the draft gears, some in the car structures, some in the lading, and some is left in the movement after couplers part.

● **Controlling longitudinal shock.** Their evaluations of various methods for controlling longitudinal shock have produced curves which were calculated originally but have now been confirmed at many points by actual testing. Typical is that showing the G forces developed at the car floor with various types of shock absorbers.

"Improvements in draft-gear capacity and travel are being made constantly," says a recent NYC research report. "The AAR minimum requirements of 18,000-foot-pound capacity for 24 5/8-inch pockets are exceeded by two and three times with modern gears, but at the expense of closure force. In the 36-inch gear pocket, still higher capacities are possible.

"The cushion tube, which utilizes both gears in impact, more than doubles the gear capacity by increasing the closure distance and also divides the reaction between both ends of the car. Hydraulic draft gears and sliding center sills have considerable promise because they will protect car and lading at higher impact speeds than is possible with friction and rubber gears. High capacities are inherent in the hydraulic system, but, to obtain their full potential, closure travel must be much higher than that of conventional gears."

● **A needed index.** What lies ahead? "The railroad industry has no quality index on environment," says Director Wright. "About the only quality measure in our freight transportation has been on-time performance. That is insufficient for the types of freight that are moving today. We need to be able to give our customers a concise statement of our capabilities with respect to environment. This is an industry goal which probably would best be done by the AAR. If environmental ratings are left to some group outside the railway industry, railroads may be put at a competitive disadvantage. This could happen if ratings were to be based on too few observations, or if undue weight were given to railway capabilities before high-capacity shock absorbers became available." ■

(Product Reference 67A)

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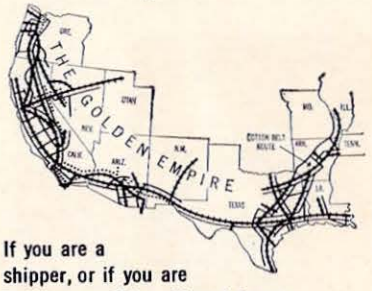

If you are a shipper, or if you are having something shipped to you,

call Southern Pacific first!

(Product Reference 67C)

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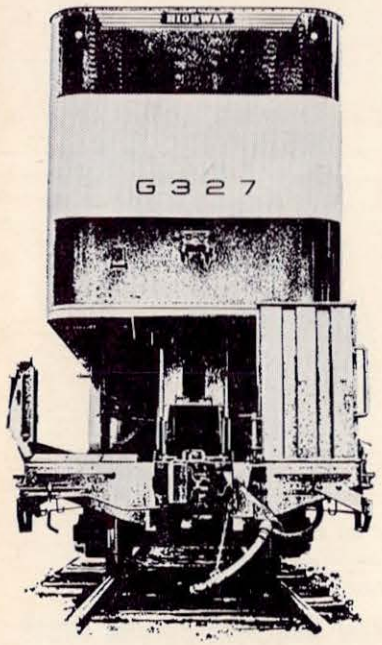
GREAT NORTHERN RAILWAY



GREAT NORTHERN RAILWAY

RAILROADING AFTER HOURS WITH JIM LYNE

LYNE

QUARTET FROM YALE—Yale University's graduate course in transportation now has four railroad presidents among its alumni—John Budd of the Great Northern, R.A. Emerson (Canadian Pacific), Downing Jenks (MoPac) and Perry Shoemaker (Jersey Central)—Mr. Emerson being the most recent addition to the group.

I have seen a modest pamphlet entitled "Transportation at Yale," which summarizes the university's work in this area of education. It began back in 1883-84 with a course initiated by the late Arthur Twining Hadley (who, in addition to being a university professor, and later president, was also for some years a part-time editor of our predecessor publication, Railroad Gazette).

Transportation courses continued after Hadley's death in 1913 under various teachers, and such studies were endowed in 1914 by Lord Strathcona and Mount Royal (who started his career as plain Mr. Smith). In 1924 the Thomas DeWitt Cuyler transportation professorship was inaugurated—first held by Winthrop M. Daniels, and, since 1945, by Kent T. Healy. The graduate transportation students have never been numerous—usually around three or four each year—but their high ratio of success in their subsequent careers speaks for itself.

GAS PRICES IN EUROPE—I saw in the paper the other day that they are having a "gas war" in Britain—but that gasoline still costs the equivalent of around 65¢ per U.S. gallon; and that three-fifths of this price (i.e., a little less than 40¢) is represented by taxes. Apparently the British have not adopted the credo—so persistently preached and widely accepted in the U.S.—that there's something sacred about the gasoline tax, and that it must be spent exclusively for highway purposes. The British still seem to cling to the belief that the highway system—being a piece of economic property—ought to pay its own way, and also contribute substantially to general expenses of government.

A lot of Americans who travel around Europe come home to tell us how enterprising the railways there have been in hanging on to their passenger traffic. They might, while they are at it, also look into European practices in taxing motor vehicles and motor fuel. Most of the European railways are doing relatively well with their passenger business, and deserve full credit for doing so—and the failure of the taxing authorities over there to pamper highway (and air) traffic, as is done in the U.S., is certainly a contributing factor.

BIGGEST TRAINLESS CITY?—As to what's the largest city without railroad service, Economist George Hilton writes from the Brookings Institution (where he is guest scholar) that it all depends on whether you have in mind a "dormitory suburb," such as Arlington, Va., or a really independent municipality. He suspects that New Britain, Conn. (85,000 population) is the largest independent community without railroad passenger service—with runners-up being Troy, N.Y. (65,000) and Wilkes-Barre, Pa. (58,000). Providence, R.I. (195,000) is the largest place with only one railroad; while, of course, Chicago is the city served by the most railroad companies.

Dr. Hilton does not consider a check-up on places getting along without railroad passenger service to be a pursuit of "trivia." He believes information of this kind is important to the ICC in weighing Sec. 13a actions to permit withdrawal of poorly patronized passenger trains. We all know of communities that have suffered inconvenience from the loss of their passenger trains—but are there any that have been grievously and specifically harmed, so far?

RAILROADING, A FAMILY AFFAIR—On the Georgia Railroad there is a family named Chapman which has been railroading in quantity. At one time (so President J. C. Mixon tells me), there were 15 representatives of this family on the payroll. A list of 14 of them had years of service totaling 459 and averaging over 32 years. One of them was on the job for 64 years. Most of them were clerks, but there were a couple of agents, a couple of dispatchers and a couple of train service people in the group.

While the hiring of kinfolks can, no doubt, be overdone, it certainly speaks well for railroading, and a particular railroad, when relatives of employees are eager to go get into the same line of work for the same company.

TOMORROW'S TMs

(*Continued from page 35*)

an incidental, rather than a major, obstacle to procurement of personnel qualified for future advancement.

One New Englander does suggest that, if salaries are adequate, interest in traffic management will follow as a natural result. Somewhat similarly, R. A. Stuart, general warehouse and traffic manager, Whitehall Laboratories, New York, agrees that, "if you offer a reasonable salary—somewhat above average—and can show where opportunities are available, you can get good personnel."

On the other hand, F. T. Day, TM, Warner & Swasey Co., Cleveland, observes that, "as a part-time teacher in transportation at a local college, I am exposed to companies seeking traffic personnel. I have found that, generally speaking, salaries are far too low, and few companies know how properly to evaluate a traffic job. With proper evaluation, I believe the salary question would be overcome."

● **Final analysis.** The whole subject of the Poll is summarized in two detailed replies, one from New England and one from Canada. From the former, a respondent writes:

"In this area, all the factors you list have some influence on the traffic job situation. I know of many situations . . . where the transportation function is in the hands of someone without adequate knowledge, who is not encouraged by management to get more knowledge and thus has no sense of challenge and no motivation to become an expert in the transportation field.

"Around here there is both a quantitative and a qualitative lack of good traffic courses. Although several colleges have attempted to schedule such courses, they have been discouraged by lack of interest.

"Mergers of companies and relocation of plants have left some qualified industrial traffic men without jobs, and most of them are forced over into the carrier field. Thus, there is no real personnel procurement problem in terms of the questions raised by the Poll. The real problem is that of convincing management at all levels that trained traffic people can make a very definite contribution to profits. Unfortunately, I can see no simple way to mount and carry forward the educational campaign that would be necessary to bring about the required change of attitude."

The Canadian answer reads in part:

"There is definitely difficulty in locating satisfactory replacements when a traffic position becomes vacant. Generally, I would have to give insufficient knowledge of the field as the principal cause. Too many people approach their jobs with little more than a clerical attitude.

"Because this type of person lacks imagination, he also lacks an interest in traffic and does not respond to the 'challenge' of traffic management. Inadequate salaries and slow or uncertain advancement are the result rather than the cause of difficulty in locating suitable personnel.

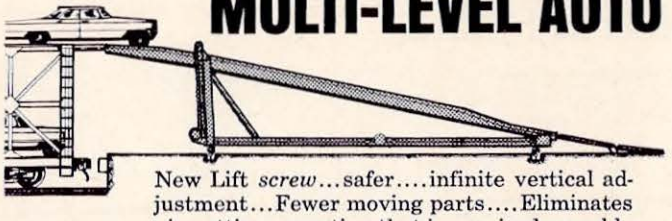
"Lack of adequate traffic courses does not seem to be a factor by itself. The existence of such courses neither adds to nor detracts from the number of suitable applicants available.

"Despite strides made in recent years, the 'shipping department' is still regarded by too many employers as the place to put the wife's brother to work. Traffic men are perhaps spending too much time pointing out to each other what an important role they are, or should be, playing in industry. The role is important, but the people who have to be sold are top management.

"It seems obvious that the remedy to the situation is to direct an 'awareness' campaign to the people who foot the bill." ■

LOADING RAMPS

MULTI-LEVEL AUTO



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(Product Reference 69A)

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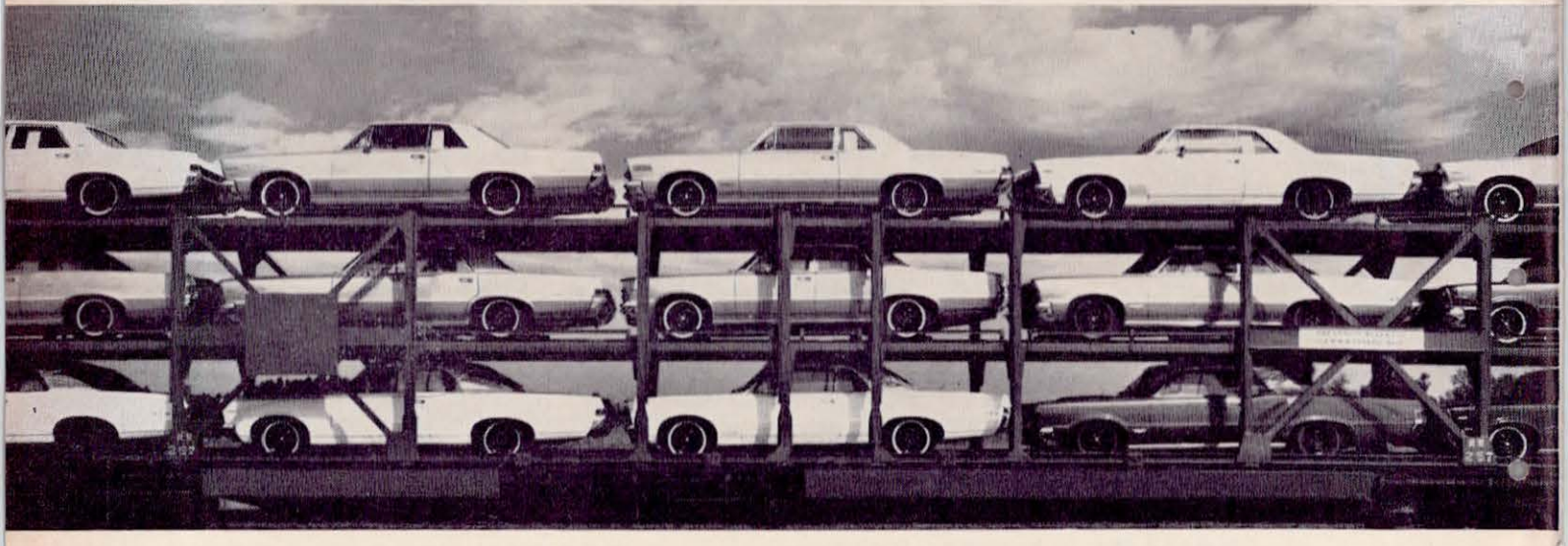
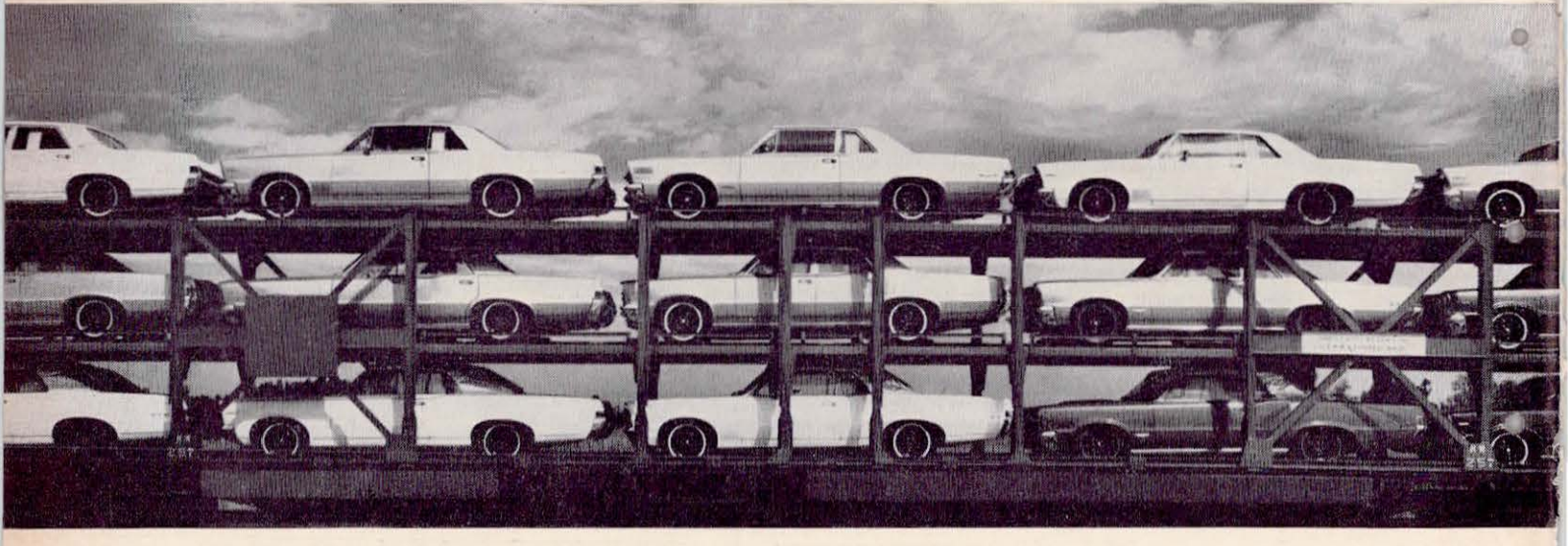
(Product Reference 69B)

RACK 'EM UP! 3,OOO,OOO NEW AUTOMOBILES A YEAR



RIDE FASTER AND CHEAPER ON THE RAILS



More than 3 million new automobiles rode to market last year on "rack car" freight trains, arriving swiftly, safely, and at far less cost. Each of these trains can carry as many as 1,800 new autos. (If moved over highways, one such shipment would require 300 trucks.) The rack car train is an example of how the taxpaying railroads are shaping the transportation future, winning new business with new and better ideas, and giving consumers better service and lower cost.

ASSOCIATION OF

AMERICAN RAILROADS

MARKET OUTLOOK

Carloadings

Loadings of revenue freight in the week ended April 17 totaled 555,162 cars, the Association of American Railroads announced on April 22. This was a decrease of 9,475 cars, or 1.7%, compared with the previous week; a decrease of 21,181 cars, or 3.7%, compared with the corresponding week last year; and a decrease of 6,099 cars, or 1.1%, compared with the equivalent 1963 week. Ton-miles generated by carloading in the week ended April 17 are estimated at 13 billion, an increase of 1.4% over the the corresponding week of 1964, and 8.9% below the 1963 week.

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Apr. 17

District	1965	1964	1963
Eastern, including Allegheny and Pocahontas ..	227,513	233,898	231,622
Southern	119,935	115,541	116,690
Total Eastern and Southern Districts	347,448	349,439	348,312
Northwestern .	63,942	68,330	60,333
Central Western	106,236	118,388	112,909
Southwestern .	37,536	40,186	39,707
Total Western Districts	207,714	226,904	212,949
Total All Roads	555,162	576,343	561,261
Commodities:			
Grain and Grain products	45,888	45,942	51,160
Livestock	1,757	2,705	3,158
Coal	106,693	112,882	109,886
Coke	9,546	7,946	8,437
Forest Products	39,085	38,682	35,342
Ore	26,937	32,671	19,687
Merchandise l.c.l.	9,795	13,400	17,897
Miscellaneous .	315,461	322,115	315,694
Apr. 17	555,162	576,343	561,261
Apr. 10	564,637	522,572	556,081
Apr. 3	548,714	513,822	546,021
Mar. 27	541,399	520,527	558,613
Mar. 20	550,940	530,178	534,998
Cumulative total, 16 weeks ...	8,499,232	8,327,283	8,262,475
Estimated revenue ton-miles (billions) 16 weeks ...	205.4	194.5	180.1

PIGGYBACK CARLOADINGS.— U. S. piggyback loadings for the week ended Apr. 10 totaled 19,551 cars, compared with 15,181 for the corresponding 1964 week. Loadings for 1965 up to Apr. 10 totaled 278,715 cars, compared with 237,973 for the corresponding period of 1964.

IN CANADA. — Carloadings for the ten-day period ended March 31 totaled 109,405 cars, compared with 72,087 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
March 31, 1965	109,405	35,156
March 31, 1964	90,841	33,717
Cumulative Totals		
March 31, 1965	877,839	306,855
March 31 1964	880,631	327,648

FREIGHT-TRAIN CARS

► *Bangor & Aroostook.*—Ordered 50 70-ton refrigerator cars from Pacific Car & Foundry at a cost of $1.5 million for delivery in September.

► *Burlington.*—Ordered 100 52½-ft, 100-ton gondolas equipped with FreightMaster hydraulic cushioning devices from the Havelock shops. Delivery will be completed late this year.

► *Richmond, Fredericksburg & Potomac.*—Ordered 50 70-ton pulpwood cars from the Fruit Growers Express Alexandria shops.

► *Southern.*—Ordered 50 100-ton, 70-ft bulkhead flat cars from Thrall Car at a cost of $1.1 million. The cars, to be used for carrying cast iron pipe, will be equipped with roller bearings, cushioned underframes and 18 sets of loadbinder chains. Deliveries are scheduled to begin in November.

PIGGYBACK

► *Trailer Train.*—Ordered 220 standard level flat cars from Bethlehem Steel, and 100 low level cars from ACF.

FOREIGN

► *India.*—Northeast Frontier Railway ordered Type K2 traffic control system from GRS International to control traffic on 82 miles of single track between Bongaigon and Chamgsari.

NEW FACILITIES

► *Louisville & Nashville.*—Major current construction projects include expansion of facilities at Tilford Yard, Atlanta, $754,085; installation of CTC between DeCoursey and Patio, Ky., $1,403,855 (work to begin when ICC approval is granted); lengthening of certain passing tracks and removal of others between Mobile and Montgomery, $878,719; line change and construction of a new concrete-and-steel bridge on the Wetumpka Branch north of Montgomery because of a dam development, $1,107,246.

► *Santa Fe.*—Plans to build a 37½-mile rail line in New Mexico from York Canyon to French. The new line will clear the way for a proposed unit-train operation between York Canyon and the Kaiser Steel mill at Fontana, Calif. A train of 8,400 tons moving every four days is contemplated. To maintain the operation, Santa Fe proposes to add 101 100-ton-capacity coal cars and 11 diesel-electric locomotives to its fleet.

► *Western Pacific.*—Major track projects include replacement of 10.97 miles of 100-pound rail with 136-pound continuous welded rail in main track between Flanigan and Sano, Nev.; and replacement of 895 miles of 100-pound rail with 136-pound continuous welded rail in main track between Krum and Weso, Nev. Total cost of the two projects is estimated at $1,380,000. All work will be performed by company forces. WP will also extend a siding at Camp Rodgers, Calif., at a cost of $252,500 to facilitate operations in the Feather River canyon and eliminate train delays experienced with the handling of longer trains.

YOU OUGHT TO KNOW

N&W improves Sandusky line: Norfolk & Western Vice President Walter S. Clement predicts Sandusky will be the most efficient port on the Great Lakes when N&W's planned improvements are completed. N&W acquired pier facilities at the Ohio port last fall when it took over the Nickel Plate. Improvements to the Sandusky line were made during the past winter. "Trains are now moving over this line at 45 mph," said Clement, "and we expect to operate them at nearly 70 mph before the end of the year."

E-L reduces deficit: Erie Lackawanna's $1.5 million deficit for the first quarter is less than half the $3.2 million loss reported for the same period last year. The road's financial burden may be further lightened this summer when the state of New Jersey adjusts its subsidy for commuter operations. E-L Chairman William White hopes the improvements will help pave the way for merger with the Norfolk & Western. He told stockholders at the road's annual meeting this month that "initial discussions" have been held with N&W to bring up to date a study of savings that would result from merger.

New TOFC group organized: With piggyback business going up steadily and spectacularly, it had to happen sooner or later. Some 75 TOFC experts representing 35 railroads offering piggyback service organized the National Railroad Piggyback Association in Chicago April 15. NRPA elected E. O. Walters, vice president-general manager Kansas City Southern Transport Co. Inc., president and promptly formed five committees to wrestle with pressing TOFC problems. The committees will concern themselves with sales, operations and terminal problems, mechanical problems, containerization, and car equipment. NRPA's next meeting will be in June in Chicago.

Piggyback to Puerto Rico: The Pennsylvania and Sea-Land Service, Inc. have teamed up to provide piggyback service between the continental U.S. and Puerto Rico. Sea-Land will provide regular and open-top trailers, and refrigeration service will be available where required.

Safety report: No passenger fatalities were reported in train and train-service accidents in February, but 84 passengers were injured, according to the ICC. This compared with no fatalities and 88 injuries in February 1964. Twelve employees on duty were killed in February 1965 and 1,495 were injured, compared with 12 killed and 1,471 injured in February 1964.

Argument on Northerns merger: The ICC will hear oral argument June 16 on Examiner Robert H. Murphy's report in the Northerns merger case. The report recommends Commission approval of plans to merger Great Northern, Northern Pacific and Burlington into a new company—Great Northern Pacific & Burlington Lines, which would also lease the Spokane, Portland & Seattle.

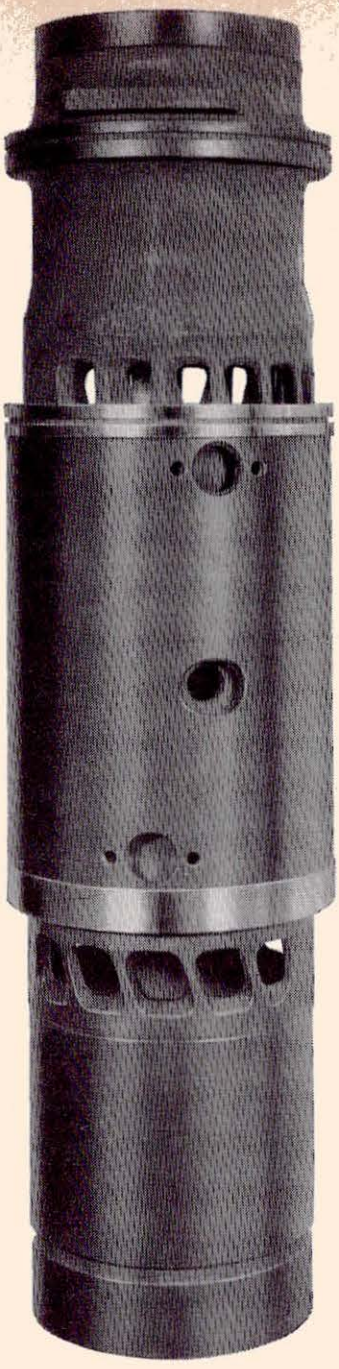
Birthday for the 'Swift': Ceremonies marking the end of the first year of operation of the Skokie Swift rapid-transit route were held April 20—complete with birthday cake and favors for passengers. Among the accomplishments chalked up in Swift Year 1: 1,601,000 riders carried, at an average current daily rate of 6,200; equipment fleet boosted from four cars to 11; rush-hour service speeded up from 10-minute to six-minute headways.

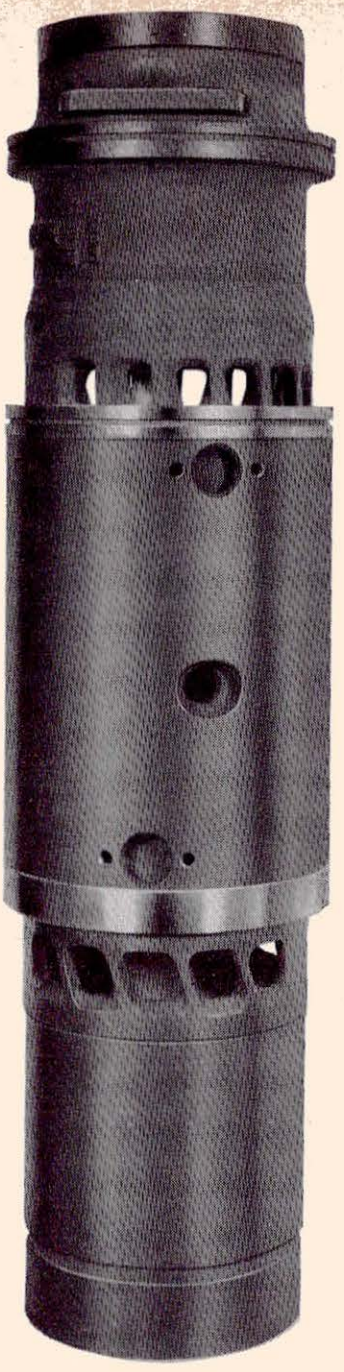
Transportation requests total $105 million: The Housing and Home Finance Agency has received 28 applications for money to make capital improvement to transportation facilities. The funds would be provided under the 1964 Urban Mass Transportation Act. For the fiscal year ending June 30, only $60 million is available, but President Johnson has requested $150 million for each of the next two fiscal years. Requests in so far total $105 million and range from under $100,000 to over $20 million. HHFA reports some 200 other localities have inquired about federal aid to improve their transportation facilities.

Truck tonnage: Intercity truck tonnage in the week ended April 10 was 2.6% below the volume for the previous week, and 7.7% ahead of the volume for the corresponding week of 1964, according to American Trucking Associations.

Current statistics

Net income	
12 mos., 1964	$699,000,000
12 mos., 1963	651,000,000
Carloadings, revenue freight	
16 wks., 1965	8,499,232
16 wks., 1964	8,327,283
Freight cars on order	
March 1, 1965	34,909
March 1, 1964	35,760
Freight cars delivered	
2 mos., 1965	12,721
2 mos., 1964	10,720
Serviceable cars	
March 1, 1965	1,406,712
March 1, 1964	1,411,426





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PEOPLE IN THE NEWS

BANGOR & AROOSTOOK.—Curtis M. Hutchins elected chairman of the board. Mr. Hutchins served as president of the road between 1948 and 1957 and as chairman of the board from 1952 to 1959.

William M. Houston, assistant general counsel, Bangor, Me., promoted to general counsel, succeeding **John E. Hess,** who had been serving in the dual capacity of general counsel and vice president—finance. Mr. Hess continues as vice president—finance and clerk. Mr. Houston also appointed assistant clerk.

JERSEY CENTRAL.—Initial step in the move of CNJ general headquarters from Jersey City, N.J., to the Gibraltar Bldg., 153 Halsey Street, Newark, N.J., was made last week with the transfer of most of the freight traffic department personnel to the newly-leased quarters. Included in the move was department head **James L. Barngrove, Jr.,** vice president in charge of freight traffic.

Plans call for other departments to move to the new headquarters or to other locations within the next eight months. Last to leave Jersey City will be the executive and operating departments.

A new traffic office was opened in the Woolworth Bldg., New York, on April 1, at which time the staffs of **V. L. Pernter,** freight traffic manager, and **E. T. Libby,** general foreign freight agent, were moved from Jersey City, and that of **B. J. McSweeney,** general freight agent, from quarters in the road's ferry terminal at the foot of Liberty Street, New York.

Other recent steps taken to improve service to freight shippers and receivers include establishment of new traffic offices at Atlanta, Ga., Cincinnati, Ohio, and Montreal, Que., Canada. On or about June 1, Mr. Barngrove announced, the CNJ plans to open a new traffic office in San Francisco.

Robert R. Giles appointed marketing assistant, freight traffic department, Newark.

LOS ANGELES UNION TERMINAL—UNION TERMINAL WAREHOUSE.—J. A. Williams appointed president, succeeding **A. F. Mortensen,** who retires April 30.

LOUISVILLE & NASHVILLE.—Earl J. Wise, general coal traffic agent, Louisville, Ky., retired March 31, after 49 years of continuous service. **W. P. Shoemaker,** engineer, methods and development, appointed manager, engineering and development—coal. **C. J. Wetzel,** manager of service—coal traffic, named manager, service and equipment—coal. **A. F. Hohmann,** general coal freight agent, appointed manager, coal rates. **J. R. Claxon,** manager of sales—coal traffic, appointed assistant to coal traffic manager. **R. L. Money,** assistant to general coal freight agent, named assistant manager—coal rates. **R. E. Lynch,** staff assistant, appointed assistant manager, service and equipment—coal. **R. D. Jones, Sr.,** appointed staff assistant.

NEW YORK CENTRAL.—Harold J. Quis appointed manager of chemical industry services—system, New York. One of Mr. Quis' major activities will be expansion of Flexi-Flo service for shippers and receivers of chemicals. Flexi-Flo is Central's new, coordinated rail-highway system for transportation of dry bulk commodities. Mr. Quis was director of marketing for Celanese Chemical Co. prior to joining the Central.

R. J. Tiffany, freight claim agent, New York, retired after nearly 48 years of service and that position abolished. **L. F. Battaglia** appointed director freight claims, New York.

NORFOLK & WESTERN.—John J. Fitzpatrick, vice president, Cleveland, Ohio, retires April 30 after almost 50 years of railroad service. He began his career with the Baltimore & Ohio, later serving the Chesapeake & Ohio, Nickel Plate and the Traffic Executive Association—Eastern Railroads.

Supply Trade

William K. MacCurdy, formerly senior research engineer, Stanford Research Institute, Menlo Park, Calif., has joined the Transportation Equipment Division of **Evans Products Co.,** Plymouth, Mich., as chief engineer—research. Mr. MacCurdy will be responsible for development of criteria and concepts for new railroad cars and damage-prevention equipment.

C. R. Strutz has been appointed manager of engineering and **H. B. Stahl,** Eastern Region manager, Railroad Products Department, **Linde Division, Union Carbide Corp.**

Edward J. Green has resigned as vice president—planning and marketing, **Westinghouse Air Brake Co.** but will serve as a staff consultant on a part time basis. Mr.

Harold J. Quis
NYC

William K. MacCurdy
Evans Products

Green announced establishment of **Edward J. Green Associates,** a new type of counseling—as distinct from consulting—firm to assist top management in developing more effective solutions to complex problems resulting from innovation, growth and diversification. The firm, which will be based in Pittsburgh, with principal office in Gateway Towers, is affiliated with independent specialists in New York, Washington and San Francisco.

Industrial Traffic

Roy Shipley, traffic manager, **Ralston Purina Co.,** Kansas City, Mo., has been appointed Western traffic manager, St. Louis, succeeding the late **Walter F. Kiesler.**

John E. Steele, assistant traffic manager, **Pennsylvania Industrial Chemical Corp.,** Clairton, Pa., has been appointed traffic manager, succeeding **John Spatz,** who retired Jan. 1.

Douglas R. Elder, director of traffic and transportation, Farm & Industrial Equipment Institute, has been appointed manager—traffic, West Allis plant, **Allis-Chalmers,** Milwaukee, Wis.

Frank Krause, Jr., assistant director of traffic, **P. Lorillard Co.,** has been appointed director of traffic, New York, succeeding **David J. MacMillan,** retired.

Milton Nevrenchan has been promoted to export services specialist, operations section, Transportation Department, **A. E. Staley Manufacturing Co.,** Decatur, Ill.

The **Omaha Grain Exchange** has expanded its Traffic and Transportation Department with the appointments of **C. L. Brennan** as director of transportation and market research and **C. J. Burrill** as commerce counsel, effective April 1.

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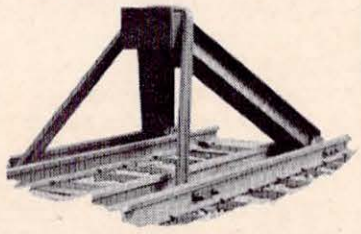

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Traffic man or 'logistician'?

The industrial traffic manager of today has enlarged interests and duties — E. G. Plowman reveals what some of them are.

The job of traffic management in industry is taking on added functions—certainly as rapidly as the traffic management assignment on railroads is evolving into the more comprehensive responsibility of "marketing." The head of the traffic department of some major industrial companies is now, at times, also his company's purchasing agent. The industrial traffic manager is expected, now, to help his company locate plants and warehouses. His job is no longer the relatively simple one it was—of minimizing freight charges by shrewd bargaining with competing carriers.

The more widely and deeply railroad traffic and marketing officers understand what the duties and aspirations of the new breed of industrial traffic managers ("business logisticians") is, the more likely it is that they will be effective marketers of railroad service. What are the goals that these 1965-model industrial traffic men are striving for? Many questions in this area are answered in a revelatory book, "Lectures on Elements of Business Logistics," by E. Grosvenor Plowman, retired traffic vice president of U.S. Steel. Dr. Plowman produced this treatise in one of his several complementary assignments—that of visiting professor of business logistics at Stanford University, which has published his book.

Dr. Plowman explains that "logistics," in its military phase, means "all details of matériel procurement and supply and resupply that, taken as a whole, make it possible for an army to march and fight." In civilian dress, "business logistics includes all activities directly related to manufacturing and distribution other than making the product or the commercial service and selling it."

Considering this widened range of the industrial traffic's manager's assignment, it becomes amply clear that a railroad traffic department cannot satisfy the needs of such a customer by the simple process of providing acceptable rates and service for moving goods from A to B. What the customer is looking for is no longer that simple. Railroad service has to take into account other needs of its customers, e.g., convenience in intraplant handling, and prompt and economic movement into and out of warehouses.

In a recent public address, Chairman Charles Mortimer of General Foods revealed how his company (with the cooperation of the railroads, incidentally) had reduced customers' expense of unloading shipments by hundreds of dollars a carload, by loading all shipments on standard pallets. Such a saving to the receiver of freight, of course, means fully as much to him as would substantially lower freight rates. The modern railroad traffic department needs to know all about the non-transportation interests of its customers—just as much as it does their concern for prompt and economic movement between terminals.

Indeed, the railroads' customers' interest in terminal-to-terminal movement is quite incidental. What he is really concerned with is economical and dependable service from the point of manufacture within the plant to the point of final consumption. Unless railroad marketing people fully understand the complete needs of customers, they are likely to fall short of meeting these needs satisfactorily, in a fiercely competitive transportation market. (For example, we were recently told of an industrial traffic manager who said he could not afford to rely on railroad movement exclusively for his highly valuable product, even if the railroad would move the traffic for nothing.)

The logistician follows the figures

Dr. Plowman makes it clear that the "logistician" selects methods of transportation, depending upon the results of mathematical calculation—and not because the carrier's salesman is "a nice guy." He is deeply aware of the wide and growing variety of transportation service (for-hire as well as private), and the complex problems to which increasing reliance on private transportation has given rise. He is fully cognizant and concerned about the reluctance of private investors to provide the capital funds the railroads need—in view of the heavy involvement of government in financing other methods of transportation. He is favorably inclined to "rationalization" of railroad service and rates, to meet modern competitive conditions—and is eager to see the "planning phase" of this rationalization initiated "as a voluntary rather than a government effort."

The author, as is well known, has been a pioneering and effective advocate of tariff simplification and the application of electronic data processing to replace much of the mountain of paper work which encumbers railroad transportation—for carriers and customers alike.

There is hardly anything more important to a competitive industry than to know its customers' interests and goals. In these lectures, Dr. Plowman has revealed some of the deep concerns and insights which came to him through many years as the nation's largest purchaser of transportation service.

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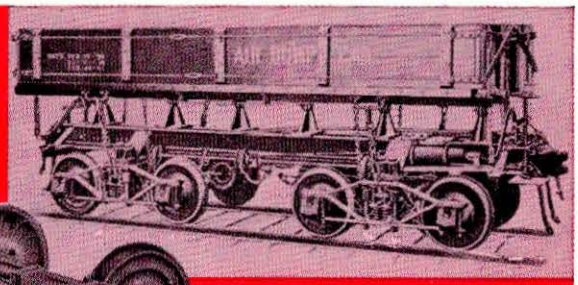

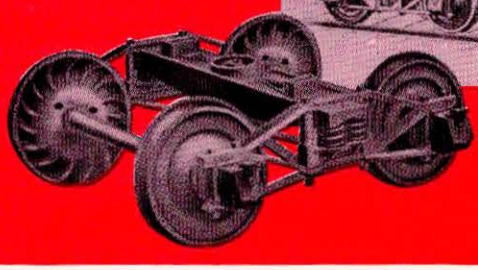

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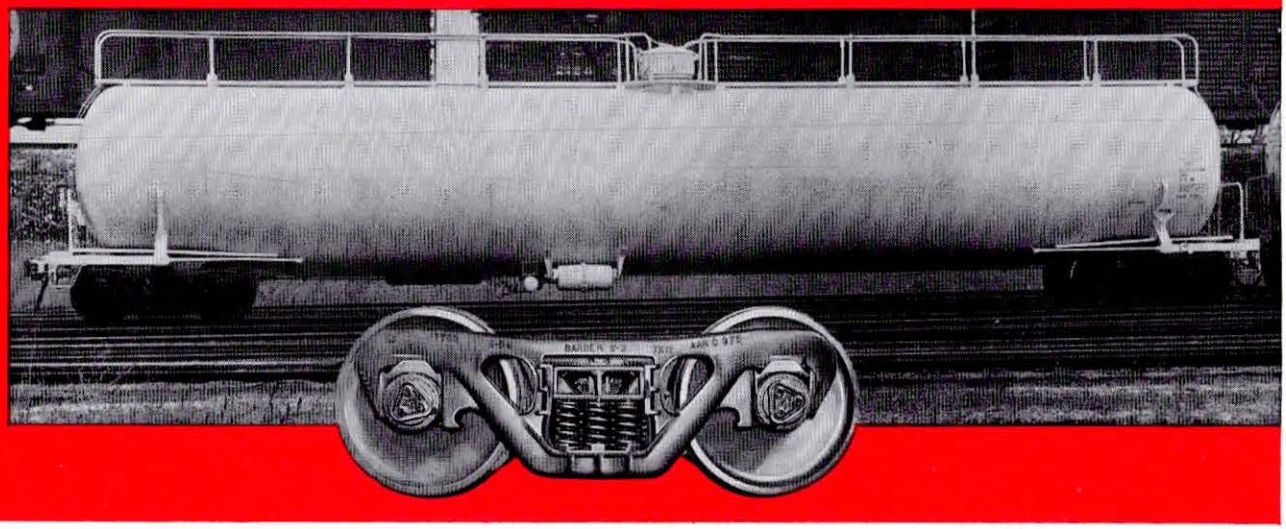

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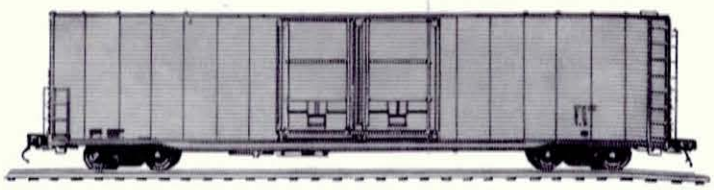

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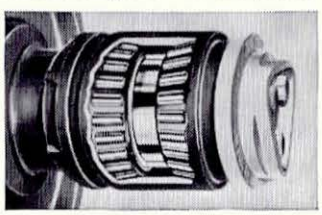

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